#### CENTRE FOR ALTERNATIVE LAND USE

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### **Christmas Trees**

#### **Inside this issue:**

Adding value for Christmas	2
Medicinal woodland fungi	2
Adding value for Christmas	3
Using woodchip as compost	3
New staff at CALU	3
Events	4
About CALU	4

### CALU's subject

#### areas:

- Horticulture
- Bio-energy
- Arable crops
- Non-food crops
- Alternative livestock

Over the past years, the numbers of locally produced Christmas trees in Wales has increased significantly. Between 2001 and 2005, there was a 48% rise in sales of home grown Christmas trees in the UK. However, there are still approx. one million trees imported from continental Europe, particularly from Denmark.

With consumers asking for local produce there are good marketing opportunities for setting up a Christmas tree plantation. However, a Christmas tree plantation needs care throughout the year to get a high quality product. Growers also need foresight and patience, as it takes between seven and 10 years until the first crop can be harvested . Another challenge is the changing fashions in Christmas tree species.

The main species grown in the UK include Noble fir, Nordman fir, Frasier fir, Norway spruce and Scots pine. The spacing distances vary between 1.0 x 1.0m and 1.2m x 1.2m depending on species. To ensure a good quality crop, and access to the trees pruning and shearing will be needed in most cases.

There are several options for how to market the product: The trees can be sold cut; in pots; or as cut (or dig) your own tree. The route to the market should be decided before you start growing.



For more detailed information, CALU has produced a technical leaflet on planting, managing and marketing Christmas tree plantations. You can download the leaflet from our homepage <u>www.calu.bangor.ac.uk</u> or phone the office for a paper copy: 01248 680450.

### Safe use of pesticides – Workshops in the South

Following the success of the workshops across North Wales, three additional workshops are planned in the South of the country. The on-farm workshops provide farmers and growers with information on how to use pesticides effectively and safely. Workshops planned for 2009 will be held at -

Pembrokeshire College - date to be confirmed Haverfordwest Pembrokeshire Gwent College - 11th February 2009 The Rhadyr, Usk Monmouthshire

Gelli Aur College Farm - 4th March 2009 Gelli Aur Carmarthen

For more information and to book a place call CALU on 01248 680450



## **Adding Value for Christmas**

Some interesting questions were raised relating to the pricing of products and the importance of colour at the 'Adding Value to Christmas' event held at the Welsh College of Horticulture on the 26<sup>th</sup> November 2008.

The phrase 'colour sells' is vitally important during the winter, where most plants are looking dull. A festive bow or a flowering pansy can boost sales in the garden centre. Tim Ashton from the Horticulture Trades Association (HTA) recommended that labelling locally grown and produced plants with a production location can increase sales. Northop Garden Centre has the added advantage of being supplied by Northop Nurseries which is also on the Welsh College of Horticulture site. Telling the customer where the plants have come from will reassure the customer that their purchasing choice is helping the local economy. Increased sales can also be gained from plants labelled as 'Garden Centre Recommends' or 'Manager Special'. This can give the customer reassurance that they are buying a new plant or product.

Robert Mackey a lecturer at the college suggested regular checking of plant prices is important as plants could be left in a display bed because they are incorrectly priced. Re-arranging displays and bringing in new plants is a good way to keep displays attractive to regular customers.

#### Medicinal Woodland Fungi By Nico Jenkins

Certain wood inhabiting fungi are known as 'polypores' (Basidiomycetes) due to the many fine pores on the underside of the fruit body. Polypore fungi are often used for medicinal purposes, especially in Eastern countries. Fungi are mentioned in Chinese pharmacopeia dating back to the third century. Four species in particular are still considered to belong to the highest class of medicines, promoting all-round good health. These are the wood-rotting polypores *Ganoderma lucidum* (Ling Zhi), *Polyporus umbellatus* (Zhu Ling), and *Wolfiporia cocos* (Fu Ling) and the insect pathogen *Cordyceps sinensis*.

Using the polypore records (Aphyllophorales, a.k.a Polyporales) from Charles Aron's (2005) mycota of North West Wales, a large number of these fungi or closely related species were found to have a wide body of scientific literature discussing their bioactive compounds and the effects of these compounds. These species are from the genera – Antrodia, Fomes, Ganoderma, Grifola, Laetiporus, Meripilus, Piptoporus, Polyporus, Sparassis and Trametes.



The bioactive compounds contained in these fungi are polysaccharides, complex sugar molecules. Polysaccharide molecules can be found in the fungal cell walls which contain chitin. Chitin is indigestible to humans; hot water extraction is the only simple proven method for breaking down the chitinous cell walls and releasing high quantities of the bioactive polysaccharides, structurally intact and undamaged. These polysaccharide compounds are thought to fool our immune system into creating an immune response while posing no real threat. This response has been shown to activate a variety of immune effector cell responses, including an increase in macrophage and killer T-cell activity.

#### DID YOU KNOW ...

The Armillaria bulbosa (now known as A. gallica) mycelial network beneath the soil of Michigan is the largest biomass (15 ha., ca. 10 000 tonnes) of any single living organism.

### **Medicinal properties of Christmas trees**

Scientists in Wales are looking at extracting a chemical from the pine needles of Christmas trees which they believe fights bird flu. A chemical known as shikimic acid is currently used in the production of an anti-bird flu drug and is one of many compounds found in Sitka spruces grown across Wales, making up roughly 30% of Welsh forests.

Sitka spruces also contain resins, oils and flavonoids which may help fight heart disease; and sugars with probiotic properties.and bark for use in health products.

Researchers at Bangor are currently looking at ways to extract these compounds for the chemical industry and believe that it could be worth millions for the Welsh economy. Mobile distillation units could be used in Welsh forests to collect the oils, or they could be sited at sawmills. Shikimic acid currently fetches between £163 and £327 a kilo (2.2 lbs) which could provide a massive boost to the timber sector and add value to Welsh forests. B.C Bangor, formerly The BioComposites Centre estimates that the process could bring £10 million a year to Wales. The research at Bangor University funded by Woodknowledge Wales (WKW) involves taking twigs and needles from the fridd near the university and applying steam and organic solvents to extract the oils.

#### DID YOU KNOW...

Compost can reach temperatures of up to 70 degrees Celsius and these high temperautrres can partially sterilize the compost.

## Using woodchip as compost

Pont Bren Farmers is a group of nine farmers near Llanfair Caereinion who have been using woodchip for six years as animal bedding. The woodchip is produced from waste wood, hedges and woodland management from neighbouring sites. The woodchip that has been used for animal bedding is sieved. The large material is mixed with fresh wood chip and reused as cattle bedding. The remaining finer grade material is taken to the nursery site for use as growing media. Aled Morris, a member of the grower group, has been using the composted woodchip animal bedding as a growing medium for native species of trees. The commercial nursery is located at 300m altitude and supplies a range of hedging and forest species. The seeds used for production are all collected locally.

For more information on composted woodchip please see CALU technical leaflet 050104: woodchip for animal bedding and compost.



## New staff at CALU

Nico Jenkins joined the CALU team at Henfaes Research Centre in November. With a first degree in Psychology Nico has recently completed an MSc at Bangor University in Conservation and Land Management. Her master's dissertation was a review paper linking woodland fungi found in North West Wales with research on the medicinal properties of these or similar species (see article on pg. 2). Originally from south Wales Nico has worked voluntarily on organic farms in Southern Spain and Northern Portugal gaining experience in horticultural production, composting, cob building and dry stone walling. As well as conservation Nico has a strong interest in agriculture and currently lives on a sheep farm outside Bangor. She has a special interest in all things fungi from gourmet edible fungi, stunning waxcap fungi, medicinal fungi and using fungi as a biofuel!

### **CENTRE FOR ALTERNATIVE** LAND USE

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Supporting sustainable land use in Wales



## **Forthcoming Events**

A selection of our forthcoming events. For more information and more events, please visit our website.

Tuesday January 20th - Beekeeping Course for Beginners, Henfaes Research Centre, Abergwyngregyn

Monday January 26th— Pembrokeshire Arable Discussion Group

Thursday January 29th— North Wales Berries meeting

Tuesday February 3rd—Soft fruit production, Penlanlas, Rhydyfelin

Wednesday February 11th—Safe use of pesticides— Workshop, Coleg Gwent

Wednesday February 11th—Pig discussion group with Amy Lowe from Hybu Cig Cymru, Hotel Nant-y-Ffin, Pembrokshire

Thursday February 12th— Goat meat discussion group, Hotel Nant-y-Ffin, Pembrokshire

Wednesday 25th February— Wood fuel event, Henfaes Research Centre Abergwyngregyn, Bangor

Wednesday 4th March— Safe use of pesticides—Workshop, Gelli Aur college Farm, Carmarthenshire

Wednesday 18th March—Small scale production and marketing of fruit and vegetables. Welsh College of Horticulture, North.

Thursday 26th March—Soft fruit production, Nicholaston Farm, Gower

## About CALU

CALU delivers the Farming Connect Knowledge Transfer Development Programme for Land Management. The programme provides information to any business in Wales that is interested in:

- Horticulture
  - **Bio-energy**
- Alternative Livestock
- Arable Crops
- Non-food Crops

CALU has three full time members of staff and a network of associate specialists covering all the topics within CALU's remit.

CALU ACTIVITIES: Open days Demonstration events Technical leaflets Training days Press articles Crop information sheets Project reports Talks Producer groups Agricultural shows

Information booklets

- CALU PARTNERS: Bangor University
- ADAS
- Coed Cymru
- Coleg Llysfasi
- Welsh College of Horticulture



Cronfa Amaethyddol Ewrop ar gyfer Datblygu Gwledig: Ewrop yn Buddsoddi mewn Ardaloedd Gwledig The European Agricultural Fund for Rural Development: Europe Investing in Rural Areas







ative Land Use

Welsh Assembly Govern