

## **Fitting perennial rhizomatous grasses into the biomass demands of Wales**

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Except on the maritime fringe, there is relatively little arable land in Wales and traditionally most farmers harvest only grass for hay or silage importing most of their straw requirements from England to the east. The fern bracken (*Pteridium aquilinum*) covers large areas of upland Wales and is harvested in some areas as stock bedding and it has experimentally been used for compost, however its biomass potential has not been investigated. For over a decade we have been growing willow as a short rotation coppice crop in mid-Wales. It grows well but requires farmers to acquire new husbandry skills, specialised equipment for planting and harvesting and for there to be suitably equipped outlets for the crop.

There is an increasing interest, both in the USA and Europe, in the production for biomass of various perennial rhizomatous grasses (PRG) which initially have the advantage to the farmer of a more familiar husbandry and the possibility of using existing machinery for maintaining the crop. The potential disadvantage is that these crops have not been trialed in the Welsh environment.

### **The Debate**

Energy crops and PRG crops in particular, have been the subject of several studies in England [1], [2], [3], [4]. The political climate seems right for developments in renewable energy crops with EU, UK and National Assembly for Wales initiatives now coming into play.

### **The Options**

In Wales four types of PRG are in need of evaluation:

- ?? *Miscanthus* – the best option for England according to limited trials, but effectively untried in Wales. Will it survive our late frosts and wet climate?
- ?? *Phalaris arundinacea* – UK native; reluctant to die back in winter, in need of development for a better stem to leaf ratio and disease control.
- ?? *Panicum* – Switchgrass. A warm season grass from the USA. Performs satisfactorily in eastern England but is it suited to the Welsh climate?
- ?? *Spartina pectinata* – Prairie Cordgrass. A productive species from the USA. Inferior to Switchgrass in eastern England but more wet-tolerant, possibly giving it an advantage in Wales.

### **The Trials**

Our presentation will report on the success of trials of these species in the 2001 growing season, to indicate which, if any, PRG is suitable for energy production in Wales.

### **References**

- [1] Bullard MJ, *Miscanthus Agronomy*. R & D Report NFO403, MAFF. 1999.
- [2] Christian DG & Richie AB. *Establishing fuel specifications for non-wood biomass crops*. ETSU B/U1/00612/00/00. Harwell, UK. 1999.
- [3] D.T.I. *New and Renewable Energy: Prospects for the 21<sup>st</sup> Century*. HMSO, London. 1999.

- [4] Rutherford I & Heath MC (eds.). *The Potential of Miscanthus as a fuel crop*. ETSU, B1354, Harwell, UK. 1992.