

## **November Update**

My research proposal has been approved subject to two adjustments. One of these was to narrow the scope of the research, as it was felt that too broad an area was being considered and the other was that I needed more paddocks planted with Miscanthus to provide a robust trial that would give statistically valid data.

To address the points raised we have decided initially to concentrate on the eco-system service benefits generated from creating Miscanthus shelterbelts. I am in discussion with Pete Morrison and David Irvine about planting Miscanthus on their farms and I should hopefully have ten paddocks from which I can collect data. Areas to be researched are production and water use efficiency from shelterbelts; the effects of shelter on earthworm abundance, mineralisation rates and selected biodiversity indicators; and the growth characteristics of Miscanthus including its carbon sequestration rate, feed value and yield potential.

I will also be planting quadrats of clover in some of the Miscanthus paddocks next year to assess whether clover persistency and pollination rate is improved in the presence of shelter.

## **Progress to date**

Ground preparation has started on Aylesbury Road farm and Karetu farm. Miscanthus plants have been ordered for delivery on November 14th and a machine planter has been sourced for planting. Karetu is to be planted at the end of November.

Paddocks on Rivergold Dairies Farm, owned by David Irvine, will be looked at this week for suitable planting locations for Miscanthus.

Forty eight bumble bee motels have been placed on Karetu and Aylesbury Road farms. In each Miscanthus paddock eight motels have been placed, four in the unsheltered control area and four in the location of the Miscanthus plantings. Occupancy rate is not expected to be very high this year but over the next three years occupancy rate should indicate whether there is a preference for motels placed in the Miscanthus shelterbelts. The motels are being used to assess the role of Miscanthus in improving biodiversity on dairy farms and also as part of the research into pollination of clover plants.

Monitoring equipment at present is being sourced so that I can measure the effects of shelter on the microclimate in the paddock. Daily readings over the summer months will give detailed information on changes occurring in one paddock on Aylesbury Road farm. This plus the remote sensing of the soil water profile already in place on the farm will be useful data in determining the effects of shelter on pasture growth and water use efficiency.