

## TEAGASC PHD WALSH FELLOWSHIP OPPORTUNITY

***“Genotypic and phenotypic assessment of forage quality in *Lolium* in the age of large-scale, inexpensive genotyping”*** Ref: 2013009

**Background:** With the rapid advances in genotyping offered by next generation sequencing (NGS) we are at a stage in forage grass breeding where the major limiting step in linkage mapping/association mapping is likely to be phenotypic (observable characteristics) and not genotypic characterization. Thus, the collection of high-quality phenotypes will be crucial for mapping studies. Forage quality and digestibility of *Lolium perenne* (perennial ryegrass) is related to biomass accumulation, flowering time and lignocellulosic content. This project will combine phenotypic and genotypic studies on a diverse set of *Lolium* accessions to specifically assess the genetic control of these traits. Forage quality traits examined will include lignocellulose content and composition, flowering time, re-heading, biomass accumulation, and tillering capacity. We will combine this with an examination of variation in candidate genes relating to these traits using DNA sequencing and association mapping using high-density single nucleotide polymorphism (SNP) data and genic SNPs. Many of these genes are well studied in cereals and hence these genome resources can be applied to *Lolium*.

**Requirements:** Applicants should have a primary degree (First or Upper Second Class Honours) or M.Sc. in an appropriate discipline (Biology, Plant Sciences, Biotechnology, Genetics, etc.). The candidate should be highly self-motivated and be prepared for laboratory and field work with modern analytical equipment and the use of bioinformatic / genetic techniques. A willingness to travel between experimental locations and for blocks of time is expected. A full driving license is desirable.

**Award:** The PhD Fellowship is a joint project between Teagasc, Oak Park and the School of Natural Sciences, Trinity College Dublin, Ireland. The student will be based at the Teagasc Research Centre at Oak Park, Co. Carlow and the University of Dublin, Trinity College, working under the supervision of Dr. Trevor Hodkinson in association with Teagasc supervisors (Dr Susanne Barth & Dr Dan Milbourne). The Fellowship will start as soon as possible in September/October 2013.

The Fellowship provides a stipend of €22,000. University fees are paid by the student from the stipend which is tenable for 4 years.

**Further Information/Applications:** Dr Trevor Hodkinson, Botany Building, School of Natural Sciences, Trinity College Dublin, Ireland  
Phone +353 1 8961128 email: [Trevor.Hodkinson@tcd.ie](mailto:Trevor.Hodkinson@tcd.ie)

**Application Procedure:** Submit an electronic copy of Curriculum Vitae and a letter of interest simultaneously to: Dr Trevor Hodkinson ([Trevor.Hodkinson@tcd.ie](mailto:Trevor.Hodkinson@tcd.ie)) and Dr Susanne Barth ([Susanne.Barth@teagasc.ie](mailto:Susanne.Barth@teagasc.ie))

**Closing date:** May 30<sup>th</sup> 2013 or until filled.