



PhD studentship: Characterising pesticide residues in floral resources for bees

We are seeking applicants with Bachelors/Masters degree (2.1 or higher) in botany, environmental sciences, environmental chemistry, agricultural science, or similar, preferably with field and laboratory experience (e.g. in nectar/pollen sampling, chemical analysis via GC-MS or HPLC-MS, etc.). The successful candidate will have excellent team-working, communication and analytical skills, and a full clean driving licence, valid for the Republic of Ireland.

The PhD student will be registered in Trinity College Dublin, supervised by Jane Stout (TCD) and Blanaid White (DCU), and work as part of a collaborative team within the Irish Pollinator Research Network.

A studentship of €24,000 per annum will be available, which includes a student stipend of €18,000 plus €6,000 towards the annual cost of postgraduate fees, for 4 years from 1st September 2018.

To apply: please send letter of application, outlining suitability for the post, and a CV, to Jane Stout stoutj@tcd.ie before 25th July 2018.

Project description:

This position will form part of the PROTECTS (Protecting Terrestrial Ecosystems Through Sustainable Pesticide Use) project, funded by the Irish Department of Agriculture, Food and the Marine under their Research Funding programme. The successful candidate will join the dynamic and interdisciplinary PROTECTS team consisting of researchers from Trinity College Dublin, UCD, Maynooth University, Dublin City University, and Teagasc. PROTECTS will provide baseline information in an Irish context to build towards mitigating the effects of pesticide use on terrestrial ecosystem services, focussing on pollinators and soils. Our findings will help to ensure that pesticides can be used safely while protecting wildlife, health and the environment, both in Ireland and internationally.

In this PhD project, the potential for pesticide contamination of floral resources as a result of translocation from soil will be evaluated. This translocation to floral products poses a major route of exposure of pollinators to pesticides. Working with other members of the PROTECTS team, we will identify four systemic pesticides which are a) extensively in Irish agricultural systems and b) potentially have negative impacts on pollinating insects. We will develop and validate extraction protocols for these pesticides from the floral resource matrices of nectar and pollen, collect samples from model species from field sites, complete laboratory-based chemical analyses and determine residue presence/concentrations in nectar and pollen to compare with soil-level contamination. In addition, methods for screening residues from nectar and pollen samples for rapid assessment of toxicity of floral rewards will be developed, and nectar extracts will be utilised directly in bee exposure experiments.