Betaseed-funded MSc by Research Studentship: Impact of seed treatment with biostimulants on the resilience of sugar beet early development to drought stress

The sustainable intensification of agriculture is a global and local challenge amplified by the climate crisis and the decline in public acceptance of agrochemical use in conventional farming practices. Demands of consumers and authorities to refrain from using traditional chemical pesticides and fertilizers is increasing, and farmers therefore need novel seed technology solutions which ensure quality and quantity in crop production. **Betaseed is a leader in the global sugar beet seed market committed to innovation in technologies that contribute to greater sustainability in agriculture. Royal Holloway University of London’s (RHUL) Seed Science and Technology Group led by Prof Gerhard Leubner** is focused on improving crop seed quality and seedling performance by innovative and environmental-friendly seed refinement technologies. The **MSc by Research (MScR) project (fully funded by Betaseed for Home/EU tuition fees plus research expenses (bench fees), in total £7407)** is into investigating if biostimulants, including beneficial microorganisms, provide such a promising novel seed technology to ensure quality and quantity of harvest yield in crop production. In this project the focus lies on biostimulants that are applied to the seed coatings of sugar beet seeds. The goal of this research work is the characterisation of the specific biostimulant's effects and underpinning mechanisms, and their impact on drought tolerance in sugar beet. The experiments will target the early stages, germination and seedling establishment, to provide glass house and laboratory results on sugar beet early plant development. Phenotypic studies such as on seed and seedling vigour, root growth upon stress, and marker-based analyses that indicate drought tolerance will be conducted. The MScR project will be associated with Prof Leubner's long-standing experience in projects into crop seed quality and the resilience of sugar beet early development to multiple environmental stresses with Dr Jake Chandler and Dr Tina Steinbrecher as experts. The multidisciplinary RHUL-Betaseed supervisory team offers superb training and exposure to a dynamic academic and industrial environment. This includes a well equipped laboratory, a group with diverse expertise, an organised postgraduate teaching and training programme at RHUL and excellent placement possibility at the industrial partner site. Prof Leubner's group has an established track record in successful collaborative postgraduate training together with industry partners relevant to food security and agritechnologies.

For enquiries about this project please contact **Professor Gerhard Leubner** (gerhard.leubner@rhul.ac.uk)

**Application of Home/EU students for the fully industry-funded (tuition plus bench fees, total £7407)** is via the webportal: For further information about the MScR in Biological Sciences visit [https://www.royalholloway.ac.uk/studying-here/postgraduate/biological-sciences/biological-sciences/](https://www.royalholloway.ac.uk/studying-here/postgraduate/biological-sciences/biological-sciences/)

To apply follow the the link "Find out more about applying here" leading to the MScR application portal [https://www.royalholloway.ac.uk/studying-here/applying/postgraduate/how-to-apply/](https://www.royalholloway.ac.uk/studying-here/applying/postgraduate/how-to-apply/)

Important: Explicitly mention "Prof Leubner - Betaseed-funded MSc by Research Studentship" and "Impact of seed treatment with biostimulants on the resilience of sugar beet early development to drought stress"