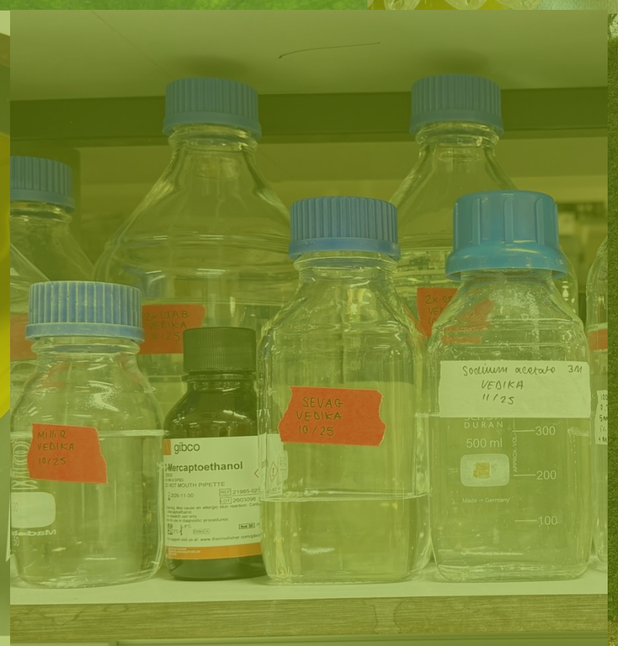
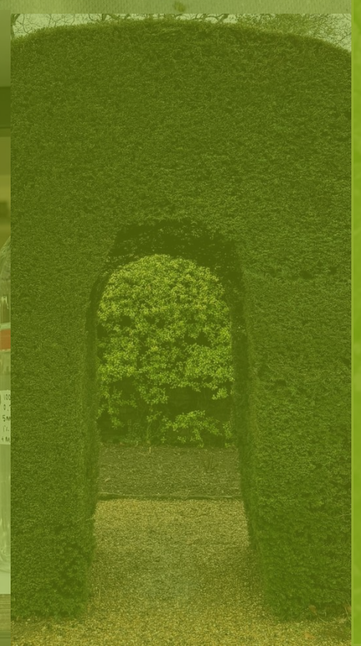
Intern Diary – *Vedika*





I was an intern on the *Applying dendrochronology for genomic resilience* project at RBG Kew. The project aims to use tree ring data in combination with whole genome sequences across hundreds of English oak trees to identify which climactic conditions UK tree populations are best adapted to.

My role was on the genomics side, optimizing and conducting DNA extractions on tricky types of tissue, including oak leaves, cores, and twigs. I found the process of adapting extraction protocols to different tissue types incredibly interesting, through learning about extraction chemistry (including having to look back upon my notes from first year molecular biology lectures!), speaking to the wonderful and incredibly knowledgeable lab team here at Kew for advice, and trial and error.

I had admittedly not spent all that much time in the lab prior to my internship, although I was familiar with the basics and had extracted DNA from *C. elegans* whilst volunteering at a lab during university. I previously thought that lab work was quite repetitive, procedural and boring. Through being in a position where I myself am holding the reigns and coming up with my own protocols and troubleshooting, I've seen how enjoyable lab work can be. My biggest challenge was coming up with a way to get usable, intact DNA out of tree cores that had been sawed and mounted for dendrochronological analysis. I ended up coming up with a solution that involved melting the glue to isolate the plant tissue, freezing it with liquid nitrogen and grinding it down with steel beads that I ended up finding at a bicycle repair shop!

My degree focused on computational biology, where my dissertation explored ways to predict the stability of forests through climate change using satellite imagery and functional traits. This internship has been a great way to apply what I learned about the resilience of forests whilst gaining a whole new breadth of skills. I also really enjoyed the process of working with samples physically, with them being in my hands rather than just a code in a large database. This has given me an appreciation for the amount of work that goes into large genomics projects. I learnt through my lab inductions in my first week that Kew has one of the world's largest DNA banks for plant and fungal specimens, available to researchers internationally. I feel that by contributing to this, I have made a small impact to plant science!

I learnt so much about the biochemistry of extracting DNA, read many papers, and dropped a very upsetting number of gels through the course of my internship. I've also had the chance to meet and learn from so many excellent and inspiring scientists who do incredible work here at Kew and across the world through the regularly scheduled science seminars.

My most valuable takeaway from my internship is a more three-dimensional, real-world understanding of research - from grant applications, funding constraints, lab logistics, and collaboration. This experience has definitely helped me gain more insight into what a career in plant science would look like. I came into my internship with knowing I had a passion for this field of research and will be leaving having gained an understanding of what that could actually look like.