

# Chemist on Sabbatical: Anything to Do with a Botanical Garden?

For nine months, from April to December 2023, I am on sabbatical leave at the Royal Botanic Garden, Kew, London. The purpose of this sabbatical is for me to document plant species with significant phytochemicals and work on research related to plant-based commercial health products.

The selection of a botanic garden over conventional research laboratories and universities for my research endeavours stems from the intrinsic alignment of my work with the realm of plants and their pivotal role in scientific exploration. Moreover, the discerning choice is further substantiated by the fact that the Royal Botanic Gardens, Kew, boasts the distinction of housing the world's most extensive and diverse botanical and mycological collections. Its living collections consist of some of the 27,000 taxa, while the herbarium has over 8.5 million preserved plant and fungal specimens.

Kew Gardens holds further collections of scientific importance, including a Fungarium, which houses approximately 1.25 million specimens of dried fungi, a plant DNA bank, and a seed bank. The Library, Art, and Archives are one of the world's largest botanical collections, with more than 750,000 volumes, including books, botanical illustrations, photographs, letters and manuscripts, periodicals, and maps. The illustration collection alone contains more than 175,000 prints and drawings of plants.

Besides housing plant collections, the Royal Botanic Gardens also includes a research section. The Jodrell laboratory, named after Mr. T.J. Phillips Jodrell, who funded it, was established in 1876. Initially, plant physiology research predominated, but botanical research gradually took its place. The research expanded into seed collection for plant conservation.



The biochemistry section was later added to facilitate research into secondary compounds that could be derived from plants for medicinal purposes. With over 470 scientists, Kew works in collaboration with over 400 institutions from more than 100 countries worldwide.

In my capacity for documentation work, I am privileged to have unrestricted access to their extensive plant and fungal collections. This allows me to interface with esteemed experts in the field of plant natural products, enabling me to broaden my knowledge on various aspects such as the distribution patterns of plants, their systematic relationships, conservation status, and the crucial element of sustainable supply.



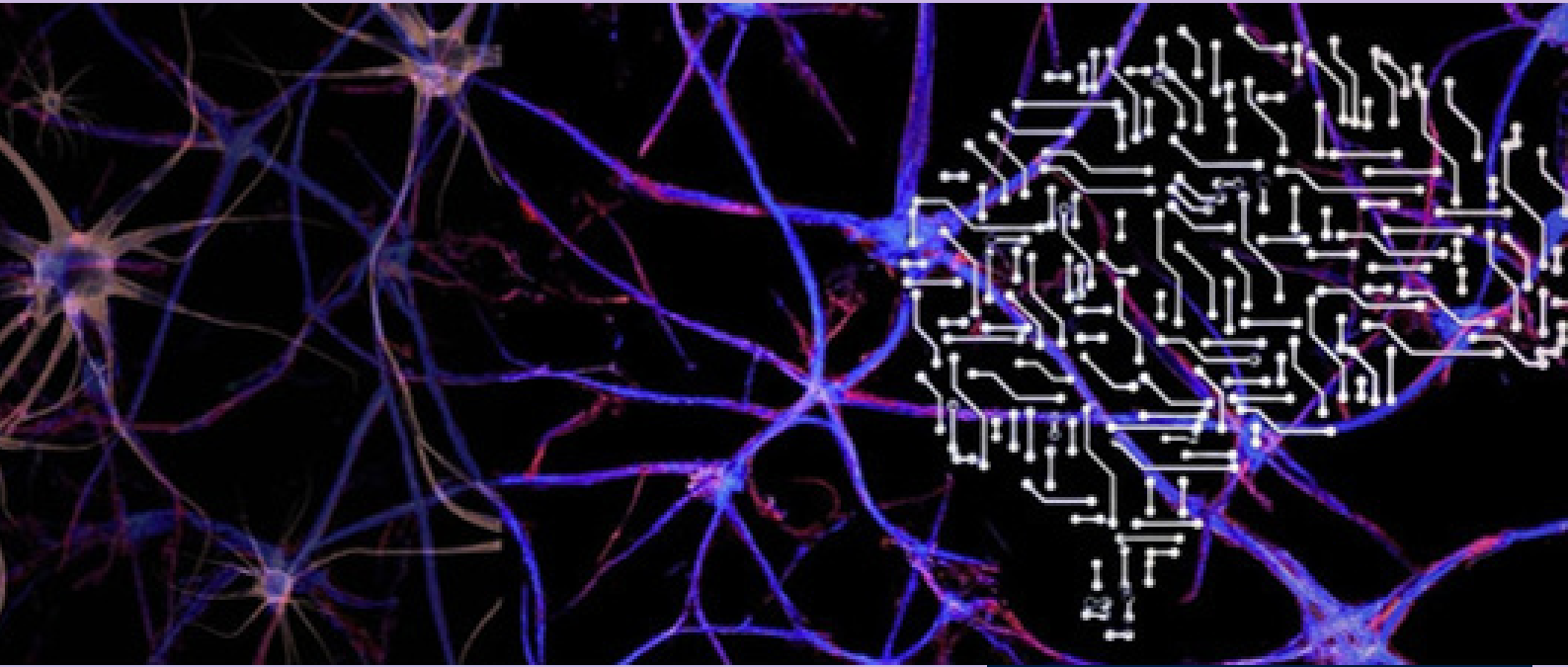
Currently, I am actively engaged in research exercises within the esteemed Commercial Innovation Unit (CIU). As a specialised unit, the CIU diligently focuses on evaluating the diverse applications of plants and fungi and meticulously authenticating botanical and fungal extracts utilised within commercial contexts. Within this unit, I leverage my extensive expertise to conduct thorough investigations into the multifaceted applications and chemical compositions of plants and fungi, with a specific focus on their commercial viability. Additionally, I am actively involved in the meticulous identification of plant species present in various commercial products.

Moreover, I actively foster collaborations with esteemed research institutes, industries, and regulatory bodies, aiming to establish robust scientific protocols for the authentication and quality assessment of plant and fungal materials entering the trade. In line with this commitment, I adhere to the principles outlined in the Convention on Biological Diversity (CBD), particularly emphasising compliance with the Nagoya Protocol and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

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