**Postdoctoral Fellowship**

**Scope of Research:** Digital Shadowing of Citrus Supply Chains: Optimising Market Retention and Access

Citrus Research International, in collaboration with the Department of Horticulture and the Department of Mechanical and Mechatronic Engineering at Stellenbosch University (South Africa), is seeking a motivated post-doctoral researcher to join our team in developing a digital shadow system in the commercial cold chain. This research aims to create a control system that integrates various environmental monitoring tools to predict quality loss, decay incidence, and phytosanitary risks in citrus fruit towards handling and optimisation of cold chain protocol.

The research will focus on modelling cold storage conditions and refrigerated container environments, which significantly impact citrus fruit quality. Much of the groundwork for this research has been done, and the candidate will be responsible for leveraging this work towards developing and refining the system. The candidate will support the development of a comprehensive digital shadow system by integrating industry data with environmental monitoring data from various sources and refining models. Machine learning will play a key role in this project, as the candidate will develop and optimise algorithms.

The successful candidate will collaborate with researchers and postgraduate students to conduct experiments and validate the digital shadow system, as well as analyse and interpret data to identify key factors influencing citrus fruit quality during storage. This position offers a unique opportunity to work with a diverse team of researchers as well as an export focused industry. The successful candidate will be able to contribute to a project with significant practical applications and potential for scientific publication in engineering, data science, and horticulture. The fellowship is initially for one year, with a strong possibility of continuation based on satisfactory progress.

**Requirements:** We are seeking an individual with a Ph.D. (obtained within the last five years) in engineering, computer science, data science or a related field. A good background in computational modelling and programming (e.g., Python, R, MATLAB) is also important.

**Commencement date:** 30 Aug 2024 or as soon as possible thereafter

**Closing date:** 31 July 2024

**Enquiries:** Send a one-page letter of motivation accompanied by a comprehensive curriculum vitae, including a list of publications and the names and contact details of two referees, to [lizeth@cri.co.za](mailto:lizeth@cri.co.za)

**Contact details of the host:**

Dr Tarl Berry (Host)

Department of Horticulture & Department of Mechanical Engineering (collaborative)

Stellenbosch University, Stellenbosch, South Africa, 7600

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* Applicants should request their referees to forward confidential reports by the closing date directly to the same address.
* Note: Postdoctoral fellows are not appointed as employees and as their fellowships are awarded tax-free, they are not eligible for employee benefits. The University reserves the right NOT to make an appointment if suitable candidates do not apply.
* Note: If the contract is for two years, this will be subject to the availability of funds and satisfactory academic progress (annual performance reviews must be held).