Position Title:	Research Associate
Position Classification:	Level A
Position Number:	NEW
Faculty/Office:	Science
School/Division:	UWA School of Agriculture & Environment
Supervisor Title:	Professor
Supervisor Position Number:	100546

Your work area

The UWA School of Agriculture and Environment is a comprehensive, research-intensive school that spans the broad disciplines of Agricultural and Resource Economics, Agricultural Science, Environmental Science, and Geography and Planning. The School is strategically positioned alongside one of the world's biodiversity hotspots and is surrounded by a wealth of agricultural, natural and mining resources. Our teaching and research benefits from a network of both national and international collaborators and has a strong track record in PhD supervision and external research grant success.

Reporting Structure

Reports to: Professor

Your role

To conduct research to investigate soil phosphorous dynamics and quantify soil P storage, supply and response in wheat, canola and lupins (e.g. the rate of soil P draw-down over time with low P fertilizer applications, and the impact and correction of subsoil P deficiency in P-responsive soils). This will involve a combination of laboratory, glasshouse and field trial experimentation.

Background: In most cropping systems in the south-western Australia, there is uncertainty about how to manage P fertiliser inputs on soils that have reached a high level of soil P fertility. The current project is aimed at generating new knowledge on (i) the long-term effects of using low P fertiliser rates on grain yield or profit, (ii) the rate of rundown of soil P when no P or low rates of P fertiliser are applied, and (iii) the agronomic measures effective in remedying low-P subsoils. On the other hand, it is unknown how subsoil deficiency in P-responsive soils can be remedied in a practically-achievable and cost-effective manner. This new knowledge will be used to underpin decisions about P management in the current south-western cropping systems.

Your key responsibilities

As part of the multi-disciplinary team comprising personnel from the University of Western Australia, WA Department of Primary Industry and Regional Development, Adelaide University, Murdoch University and two fertilizer companies, the research associate will carry out the laboratory, glasshouse and field studies and other relevant research required to quantify key processes controlling soil P storage, supply and response in wheat, canola and lupins. Tasks will include:

Formulation of specific hypotheses and optimisation of detailed experimental design to test these. Consideration will be given to (i) characterising processes governing P availability along the soil profile, (ii) determining the relationship between root structure/function and P acquisition, (iii) correcting low subsoil P availability, (iv) quantifying draw-down of soil P over time and the effect of low P fertilizer rates on crop growth and grain yield, etc.

Collect and analyse soil and plant samples

Compile/process/present data, including statistical interpretation

Contribute to writing manuscript(s) for submission to high-impact journals, and

Other duties as directed

Your specific work capabilities (selection criteria)

Relevant degree: PhD in soil science, geochemistry, agronomy, environmental science or related field

Considerable relevant research experience in soil chemistry/biogeochemistry, particularly regarding experimental capacity to characterize processes that influence soil P availability

Proven capacity to contribute to high-impact international journals

Excellent oral and written communication skills

Excellent organisational skills and demonstrated ability to set priorities and to meet deadlines

Ability to work independently, show initiative and work productively as part of a team

Special Requirements

There are no special requirements.

Compliance

Workplace Health and Safety
All supervising staff are required to undertake effective measures to ensure compliance with the Occupational Safety and Health Act 1984 and related University requirements (including Safety, Health and Wellbeing Objectives and Targets).
All staff must comply with requirements of the Occupational Safety and Health Act and all reasonable directives given in relation to health and safety at work, to ensure compliance with University and Legislative health and safety requirements.
Details of the safety obligations can be accessed at http://www.safety.uwa.edu.au

Inclusion and Diversity
All staff members are required to comply with the University's Code of Ethics and Code of Conduct and Inclusion and Diversity principles. Details of the University policies on these can be accessed at http://www.hr.uwa.edu.au/publications/code_of_ethics, http://matrix-prod.its.uwa.edu.au/inclusion-diversity