



Position Description

Reference: PV12019
Location: Burdekin

Position title	Research / Development Engineer
Reporting to	Research Engineer
Business Unit	Cropping Systems/NIR/Transition
Position Level	Level 3-4 (based on experience)
Hay Points	233-323
Direct Reports	n/a
Hours per week	38
Location	BSES Limited, Burdekin
Dimensions	The Research Engineer will be involved in R&D aimed at improving efficiency of mechanisation in planting, harvesting and transport of sugarcane in the Australian sugar industry.
Purpose	Provide engineering expertise to one or more 'engineer-type' projects and/or to collaborate with farming systems / engineering R&D staff (within and/or external to BSES) to seek solutions to mechanical issues / advancements within the sugarcane production system.
Date	January 2012

Section 1: Position Requirements

1.1 Performance Areas and Key Actions

Performance areas	Key actions
Working Relationships	<p>The appointee will work as part of a small team of engineering staff which forms part of the Cropping Systems Program. Although located in the Burdekin region, this team works across the industry. There will be ongoing interaction and communication with other Program staff (including the Leader) and the Development Officer – Harvester and Machinery Efficiency, extension providers, industry clients and collaborators (external to BSES).</p>
Results/Accountabilities	<p>The Research Engineer will work with the other team members to:</p> <ul style="list-style-type: none"> ▪ Develop best-practice guidelines for planting, harvesting and transport systems within the industry. ▪ Evaluate, develop and/or improve machinery and/or components of machinery used within the sugarcane cropping system, particularly those associated with the fallow crop, minimum tillage, controlled traffic operations and more precise on-farm management options. ▪ Evaluate harvester impacts on yields (TCH, TSH, economic net returns) and investigate opinions for minimising losses (crop, yield, sugar, etc) and optimising productivity and profitability. ▪ Collate, process, analyse and interpret data pertinent to the ‘engineering’ components of the sugarcane cropping system.
Health and safety	<ul style="list-style-type: none"> ▪ Ensure all health and safety aspects are fully considered and reasonable practicable measures are taken to ensure your welfare and the welfare of your colleagues. ▪ Ensure that all work activity is in accordance the BSES Safety Policy. ▪ Actively communicate and promote health and safety with all work colleagues, visitors and contractors. ▪ Actively consult with the local SEMC on Health and Safety matters or raise health and safety issues with team leader/supervisor or the Safety Coordinator. ▪ Report to manager/supervisor: <ul style="list-style-type: none"> ▫ Hazards or potential hazards in the workplace. ▫ Any incidents. ▫ Personal injury. ▪ Accident or near miss that may have occurred during the course of work.
Additional duties	<p>It is also expected that the occupant of this role will undertake:</p> <ul style="list-style-type: none"> ▪ Other projects as required. ▪ Additional duties as required during periods of absence of other staff.

Section 1: Position Requirements

1.2 Education / Knowledge / Experience

Mandatory	Desirable
Education	
Degree in Engineering or a field that relates to mechanisation.	Post-graduate qualification and experience in electronics and automated data capture systems.
Knowledge	
Knowledge of: <ul style="list-style-type: none"> ▪ Agricultural cropping systems. ▪ Mechanical engineering principles. ▪ Engineering drawing packages. ▪ Statistical analyses and use of stats packages. 	<ul style="list-style-type: none"> ▪ Understanding of the sugarcane production system. ▪ Sugarcane harvesters and planting systems.
Skills & Experience	
<ul style="list-style-type: none"> ▪ Experience in sugarcane or other cropping systems, field work and/or data collection. ▪ Experience in the use of farm machinery. ▪ Competent in recording data and data management systems. ▪ High level of motivation and initiative with excellent organisation skills, ability to manage competing priorities. ▪ Possession of a current unrestricted open QLD driving licence. ▪ Work in a team with minimal supervision, but in consultation with Project Leader. ▪ Ability to supervise casual field staff. 	<ul style="list-style-type: none"> ▪ Effective communication with local BSES staff, sugarcane growers and researchers. ▪ Possession of a QLD heavy duty driver's licence.
Major Challenges	
<ul style="list-style-type: none"> ▪ To develop a good understanding of the complex interaction between current/future machinery needs and different business sectors within the Australian sugar industry. ▪ Participating fully within the engineering team to enable simultaneous progress in several projects/programs. ▪ Working across regions despite being based in the Burdekin region. ▪ Working in a hot humid climate. 	
Special requirements	

Section 2: Tools of the Trade

Number	Tool
1.	Laptop computer with Microsoft Office programs
2.	Mobile phone
3.	Various pieces of scientific equipment and sampling devices
4.	Access to a suitable vehicle for work purposes

Section 3: Selection criteria

Number	Criteria
1.	Possession of at least a Bachelor's Degree in Engineering or in a field related to mechanisation / automation.
2.	Sound knowledge of sustainable agriculture and/or mechanical engineering principles. A background in a rural industry will be an advantage.
3.	Experience in the use of farm machinery and conducting work in hot and humid conditions.
4.	Good computer skills, especially in Microsoft Office applications and computer-aided drawing packages.
5.	Demonstrated ability to work independently and in a team environment.
6.	Willingness to travel to other regions across the industry.
7.	Good communication skills (written and oral) and the ability to work as a team member.
8.	Possession of a current and un-restricted open class driver's licence (valid for Queensland). Possession of a heavy-rigid licence would be an advantage.