



Sugar Research  
Australia

---

# REQUEST FOR EXPRESSION OF INTEREST

## Sustainable control options for root feeding pests

---

**Proposals must be received by 12 December 2020**

### **SRA Reference SRA-RFU-2020-IC018**

This document has been prepared to assist preparation and submission of Expressions of Interest (EOIs) to undertake a project to progress development of novel and innovative proof-of-concept solutions for control of root-feeding pests in sugarcane.

### **Summary**

Sugar Research Australia (SRA) invests in and manages a portfolio of RD&A projects that drive productivity, profitability and sustainability for the Australian sugarcane industry. As an industry-owned company, SRA is committed to setting the right targets, managing research investments to maximise the likelihood of success, and ensuring the delivery and adoption of project outcomes and impacts across the Australian sugarcane industry.

SRA has identified that development of novel and innovative proof-of-concept solutions for control of root-feeding pests in sugarcane, specifically canegrub and soldier fly, is a priority for the Australian sugarcane industry.

In this context, SRA is seeking EOIs from suitably qualified and experienced individuals or groups to undertake a program of R&D to progress development of novel pest management solutions that do not rely on conventional insecticidal chemistry.

### **Issue**

Canegrubs (whitegrubs; Coleoptera: Scarabaeidae) are the most serious insect pests of sugarcane in Australia, with one or more species present in all canegrowing regions. The soil-living larvae eat the roots of sugarcane plants leading to poor growth, loss of cane stools at harvest and, in severe cases, plant death.

One or more species of canegrubs are present in all regions. Grower losses in 2001 at the peak of canegrub damage were costed (in 2001 dollars) at \$11.4M in FNQ, \$7.1M in the Burdekin and \$0.6M in Central-South, not including costs to mills in reduced supply and poorer cane quality. Losses are currently low, with widespread use of neonicotinoid insecticides, mainly imidacloprid, by growers. While the chemistry is still highly efficacious and reasonably priced,

neonicotinoids have been banned in Europe and residues from Australian farms are being found in increasing levels in the environment.

Soldier flies (Diptera: Stratiomyidae) currently infest just under 2% of cane fields in the central and southern regions. Larvae suck juice from sugarcane roots leading to poor growth and ratoon failure. While the area affected is small industry-wide, the damage caused at a farm level is very significant and there are currently no management options other than ploughing out and fallowing infested fields. Despite intensive research, no effective chemical insecticide has been found since the organochlorine dieldrin was phased out in the early 1990s.

SRA is seeking innovative, transformational, long-term, sustainable solutions (rather than iterative changes in chemistry) for these root-feeding pests. By encouraging early development of novel and innovative proof-of-concept products, SRA aims to ensure the long-term sustainability of the industry.

### **Expected project outputs**

The project will develop:

- Experimental methods appropriate for evaluating the chosen technology against canegrubs and soldier flies at laboratory and/or glasshouse scale.
- Scientifically and statistically robust sets of data measuring effectiveness of the technology against each target (at least one species of each).
- An assessment of commercial feasibility.

### **Expected project outcomes**

By project completion it is expected there will be:

- Demonstrated proof-of-concept of one or more novel and innovative technologies for management of canegrubs and/or soldier flies.
- A plan for follow-up Phase 2 research, including potential collaborations with commercial partners.

### **Project duration and budget**

Expected project duration is 3 years, with the 2020/21 financial year budget capped at \$200,000 (excl. GST) and a total budget of up to \$800,000 (excl. GST) over 3 years.

### **EOI submission**

EOIs must be submitted through the online portal, SugarNet <https://grants.sugarresearch.com.au>.

All applicants should consult the Submission guidelines available on the SRA website <https://sugarresearch.com.au/research-investment/2020-21-research-project-investments/>.

EOIs must include a detailed and fully costed budget and a formal payment schedule with milestones (up to two per year) and appropriate achievement criteria that match expected project progress.

In addition, Activity and Milestone Timeline and Milestone Budget Calculator spreadsheets must be completed and uploaded as attachments through SugarNet using the templates supplied on the SRA website and also in SugarNet.

An IP disclosure must also be completed and submitted through the online IP Record Portal; access to the portal and instructions including an instructional video can be found at <https://sugarresearch.com.au/research-investment/intellectual-property/>. The completed IP Register, generated as a pdf file from the IP Portal, should be uploaded as an attachment to the SugarNet application.

More detail on each of these is provided in the Submission Guidelines.

## **Selection criteria and process**

Selection of the successful proposal(s) will be based on the following criteria:

- The applicant or project team having:
  - Proposed potential solutions that address the issues and are technically feasible
  - A logical research plan that includes an appropriate test methodology to evaluate potential efficacy of the proposed solution(s)
  - Demonstrated ability to conduct the necessary research activities, including appropriate experimental design and statistical analysis
  - Ability to source the necessary materials, including test insects
  - Relevant research experience, particularly with soil insects
  - Outlined a path to market for the concept including total costs, timelines, and potential barriers/challenges
  - If relevant, a plan for collaboration with appropriate commercial providers.
- The proposed project budget and in-kind or other contributions from the research organisation and any other participants in the research.
- The applicant being a legal entity with which SRA can contract. The EOI submission must describe and provide evidence of the legal status of the applicant, including an Australian Business Number (ABN) if appropriate.

Applicants must declare to SRA any matter or issue which may be perceived to be, or may lead to, a conflict of interest regarding their proposal or participation in supply of the services described. Applicants must outline a strategy so that any actual conflict of interest will be avoided.

## **Project agreement and reporting requirements**

The successful applicant(s) will be required to enter in to SRA's standard project agreement.

Milestone and final reports will be prepared in line with SRA report guidelines (see <https://sugarresearch.com.au/research-investment/forms/>).

The successful applicant(s) may also be required to prepare and/or contribute to short articles for dissemination in SRA and industry publications.

## **Negotiation**

After short-listing, SRA may engage in detailed discussions and negotiations with one or more applicants to maximise the benefits of the proposals submitted.

## **Useful background**

General information on canegrubs and soldier flies can be found on the SRA website at <https://sugarresearch.com.au/growers-and-millers/pests-and-diseases/>.

Relevant publications can be accessed from the SRA e-library at <https://elibrary.sugarresearch.com.au/> and the website of the Australian Society of Sugar Cane Technologists <https://www.assct.com.au/>.

### **Further information**

For further information, please contact Dr Stephen Mudge (Research Funding Unit Program Manager).

Phone 0436 924 252

Email [smudge@sugarresearch.com.au](mailto:smudge@sugarresearch.com.au)

### **Submissions**

Proposals must be lodged in SugarNet **by 12 December 2020.**