

# Expert report details the scientific and regulatory challenges of genetic pest-control technologies

## News Release

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Gene-editing technologies hold promising applications for pest control, but pose critical risk-management issues, according to *Framing Challenges and Opportunities for Canada*, a new expert panel report from the Council of Canadian Academies (CCA). With limited understanding of the effectiveness and potential impacts of genetic pest control, its regulation must be nimble enough to address persistent uncertainty and protect against threats.

“As globalization and climate change intensify pest-control problems, gene-editing technologies require our deepest consideration — not merely as potential solutions, but as tools with broad and uncertain consequences,” said Robert Slater, chair of the Expert Panel on Regulating Gene-Edited Organisms for Pest Control. “Assessing the utility, safety, and suitability of genetic pest control requires meaningful investments in research and development, as well as ongoing public engagement.”

Pests negatively impact human life in various ways, including agricultural production, environmental protection and sustainability, and health. In recent years, changes in temperature and rainfall have altered the ecological zones in which some pests thrive, helping them flourish in new places; for instance, the geographic ranges of several species of mosquito are shifting as climate change contributes to establishing new habitats, raising new public-health concerns related to disease transmission. Genetic pest control — including the use of gene-editing tools to suppress pest populations or diminish their impacts — has spurred global research interest.

In Canada, low research and development activity in genetic pest-control technologies could lead to a lack of preparedness for their impacts and their governance. Major research and development efforts focused on public health and agricultural applications are proceeding outside of Canada, and will prove instructive for Canadian contexts, particularly in the absence of greater domestic capacity. While jurisdictional boundaries determine pest-control regulations, the impacts of gene-edited organisms may cross borders. Building capacity for the responsible research and deployment of genetic pest-control technologies in Canada requires updated biosafety protocols and a more holistic approach to risk assessment — one that considers biosafety and efficacy alongside sociocultural and economic risks and involves stakeholders across impacted communities.

“Robust research into genetic pest-control technologies is essential to understanding their potential to serve Canada’s national interests,” said Eric M. Meslin, president and CEO of the CCA. “A thoughtful, inclusive approach to risk assessment could serve as an important model for environmental interventions around the world.”

Health Canada’s Pest Management Regulatory Agency asked the CCA to evaluate the scientific, bioethical, and regulatory challenges regarding the use of gene-edited organisms and

technologies for pest control. *Framing Challenges and Opportunities for Canada* provides an overview of the potential uses of genetic pest-control technologies and articulates how their attendant risks might inform their responsible development, deployment, and oversight.

Visit [www.cca-reports.ca](http://www.cca-reports.ca) to download the report.

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**Contact:**

Heather Ennis  
Director of Communications, CCA  
613-851-7723  
[heather.ennis@cca-reports.ca](mailto:heather.ennis@cca-reports.ca)

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