

QCIDE™ PERSONAL INSECT REPELLENT FORMULATIONS SHOWN TO BE HIGHLY EFFECTIVE IN FIRST HUMAN EXPOSURE TESTS. EXPANSION OF TREE DEVELOPMENT PROGRAM FOR QCIDE OIL PRODUCTION

- **Testing by University of Technology Sydney (UTS) shows Qcide formulations to be effective as a personal mosquito repellent under high insect pressure conditions**
- **Strong insect repellency properties exhibited by Qcide open opportunities for Bio-Gene in the large and growing repellent market, driven by rising incidence of mosquito borne diseases globally**
- **Research collaboration agreement signed with James Cook University (JCU) to tissue culture *Eucalyptus cloeziana* chemotype for Qcide production**

Bio-Gene Technology Limited (ASX: BGT, “Bio-Gene” or “the Company”), an AgTech development company enabling the next generation of novel insecticides to address insecticide resistance, is pleased to announce an update on Qcide testing undertaken with the University of Technology Sydney (UTS) and the signing of a collaborative research agreement with James Cook University (JCU) as part of a tree improvement program to support Qcide oil production.

Richard Jagger, Bio-Gene CEO commented: “We are excited to be progressing the evaluation and development of our natural product. The market is showing increasing interest in biological technology as an alternative to synthetics, and this is the first step towards creating relevant data for market segments Qcide is targeted at. The research program with JCU will enable us to move towards a higher yielding plantation and a better supply of Qcide for future commercial opportunities.”

Personal Insect Repellency Studies

The UTS studies compared numerous Qcide Personal Insect Repellent (PIR) formulations to test repellency against *Aedes aegypti* mosquitoes, a primary carrier for several serious human diseases such as Dengue, Zika, Chikunguna and Yellow Fever viruses.

All Qcide-based PIR formulations achieved greater than 90% repellency over the four-hour period of exposure, which is the generally accepted requirement to prove efficacy in support of product registration. Qcide was formulated as both a lotion and liquid spray, and at strengths as low as 25% of commercially available natural repellents, with efficacy maintained in each case.

The next stage in the development of Qcide personal repellency products is to test formulations in outdoor field conditions and broaden the scope of target pests to include bush flies, sand flies and other disease carrying ectoparasites such as ticks.

The global mosquito repellent market is undergoing significant growth, expected to reach US\$4.8 billion by 2022¹, underpinned by both the rising demand for natural plant-based products as well as penetration of previously untapped markets.

Peter May, Bio-Gene Executive Director – Research & Development, commented: “We are very encouraged by these test results using Qcide clearly demonstrating excellent personal repellency against this mosquito type, which is a prime carrier for several serious human diseases. The success of all the formulations tested gives us the confidence to progress to further field studies with the aim of addressing this large market opportunity.”

Bryce Peters, General Manager, Technical Services at the Faculty of Science UTS stated: “Repellency greater than 90% under these high insect pressure conditions is considered a good indicator of efficacy. These results would therefore indicate that Qcide exhibits strong insect repellency properties and would be expected to perform well in outdoor field conditions.”

Tree Improvement Program

In addition, the Company is pleased to announce the signing of a Research Project Collaboration Agreement with James Cook University (JCU). This collaboration is for the development of a tissue culture system for the *Eucalyptus cloeziana* chemotype being grown in plantation in North Queensland to support scale up of Qcide oil production.

Under the Agreement, JCU will establish a micropropagation laboratory at JCU’s Smithfield campus (near Cairns) and develop a system for tissue culturing and propagating plant material from superior-yielding trees currently being grown in plantation.

The project aims to develop techniques and establish procedures for a tissue culturing system for the specific *Eucalyptus cloeziana* chemotype. These can then be implemented in commercial nurseries for seedling production to enable expansion of plantation areas to satisfy future demands for Qcide oil.

Professor Darren Crayn, Director of the Australian Tropical Herbarium (CNS; a CSIRO/Australian & Queensland government/JCU joint venture) and JCU research lead to the Qcide project, stated: “JCU is pleased to have the opportunity to work with Bio-Gene on this exciting project. The facilities and expertise that JCU has in the areas of plant propagation and plant improvement through selection should greatly benefit Bio-Gene in seeking to improve the quality of trees being grown in plantation.”

Peter May, Bio-Gene Executive Director – Research & Development, added: “This project enables Bio-Gene to engage with experts in the fields of plant biology and in particular plant tissue culture in tropical species including eucalypts. This is a critical aspect of our tree improvement program aimed at producing quality Qcide oil that meets the exacting standards required for both registration as well as commercialisation of Qcide products.”

1 Mosquito Repellent Market by Product Type and Channels of Distribution - Global Opportunity Analysis and Industry Forecast, 2015 – 2022
<https://www.alliedmarketresearch.com/mosquito-repellent-market>

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About Bio-Gene Technology Ltd

Bio-Gene is an Australian AgTech development company enabling the next generation of novel insecticides to address the global problems of insecticide resistance and toxicity. Its novel platform technology is based on a naturally occurring class of chemicals known as beta-triketones.

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Beta-triketone compounds have demonstrated insecticidal activity (e.g. kill or knock down insects) via a novel mode of action in testing performed to date. This platform may provide multiple potential new solutions for insecticide manufacturers in applications across animal health and crop protection, as well as in public health, and in consumer applications.

The Company's aim is to develop and commercialise a broad portfolio of targeted insect control and management solutions.

About University of Technology Sydney, Science Faculty

UTS Science is a research-driven, relevant, innovative and practical organisation, achieving success and impact for its quality teaching and research. UTS was recently ranked 1st in Australia and 21st globally in the Times Higher Education top 100 universities under 50 years of age for young universities with indicators linked to industry innovation and academic excellence.

About James Cook University

JCU Cairns houses state-of-the-art teaching and research facilities including the Australian Institute of Tropical Health & Medicine (AITHM), and also hosts the Australian Tropical Herbarium, a CSIRO / Australian & Queensland government / JCU joint venture.