

AUSTRALIASIAN AGFOOD CONFERENCE

# BIO-GENE TECHNOLOGY LIMITED

ENABLING THE NEXT GENERATION OF NOVEL INSECTICIDES

JULY 2021

AUSTRALIASIAN AGFOOD CONFERENCE

PRESENTED BY

Richard Jagger

Chief executive Officer &  
Managing Director

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BIO-GENE  
TECHNOLOGY  
LTD



# ADDRESSING SIGNIFICANT GLOBAL CHALLENGES

The effectiveness of current insecticides is diminishing due to resistance & concerns relating to safety profiles



“Without Crop Protection, crop losses would double each year”

**CropLife**



“No new public health insecticides have been developed for mainstream vector control for 30 years”

**CDC<sup>4</sup>**

## Food Security & Public Health

### Growing Population

Current global population is 7.7 billion, growing at 70 million p.a. It is anticipated that global population will reach nearly 10 billion by 2050<sup>1</sup>.

### Challenges Of Climate Change

Climbing average temperatures and other weather events impact food production per hectare, increase the habitable environment for mosquitoes

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## Financial Impact

### Production

Currently 20-40% of food produced globally is lost to pests, valued at around US\$2000 billion p.a.<sup>2,3</sup>.

### Cost/Benefit

Direct costs due to Malaria infections valued at US\$12 billion p.a., with economic impact many times that <sup>4</sup>

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## Social Impact

### Vector Borne Disease

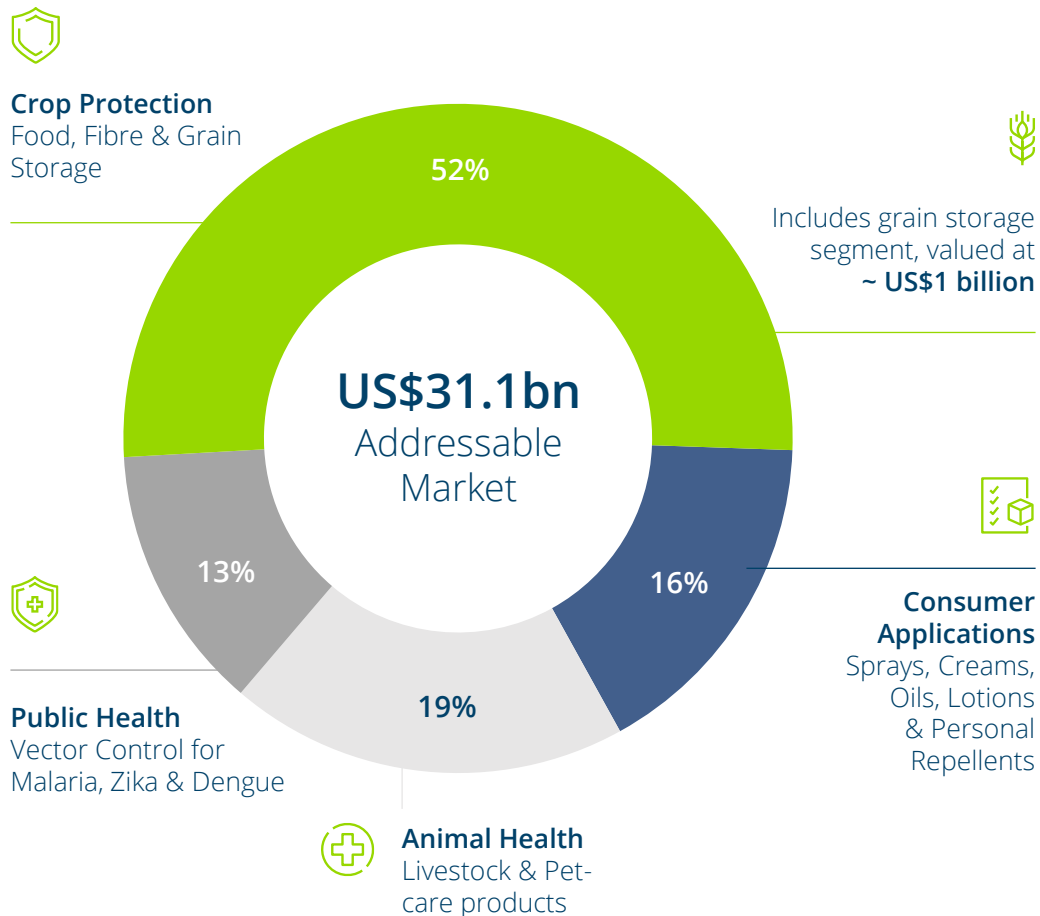
More than half the world is at risk<sup>5</sup>; account for 25% of infectious diseases and exacerbate poverty & economic hardship. Mosquito borne diseases account for over 700,000 deaths every year and there are over 200 million cases of Malaria globally

### Less Arable Land

Increased population puts pressure on available land and resources to produce food for today and tomorrow

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1. United Nations, “World Population Prospects 2019”
  2. Oerke EC, Crop Losses to pest J. Agri Sci 144: 31-43 (2005)
  3. Pimentel D Pesticides and Pest controls. In: Peshin R, Dhawan AK. (eds). Integrated pest management: innovation-development process, 1:83-87. Springer Science (2009)
  4. CDC: Malaria's impact worldwide
  5. WHO report, 2015

# OUR TECHNOLOGY ADDRESSES THESE CHALLENGES AND TARGETS GROWING GLOBAL MARKETS



Bio-Gene's insecticide platform has potential application in large, global market segments estimated to represent a total addressable market valued at over US\$31.1 billion



# OUR TECHNOLOGY PLATFORM

We are developing two products that allow entry into five key market segments



## Qcide™

### Natural Compound

An extract of a specific cultivar of eucalypt, the Gympie Messmate

Trees are farmed in concentration by sub-contractors in QLD

The leaves contain oil expressing high levels of Tasmanone, a natural compound that has shown evidence of insecticide efficacy



## Flavocide™

### Nature Identical Compound

BGT has developed a proprietary chemical process with CSIRO to deliver another Beta-Triketone; a nature identical compound that is able to be produced at commercial scale



Both of our products have potential application in all five of our target market segments

# OUR PROPRIETARY CHEMISTRY REPRESENTS A STEP-CHANGE FOR RESISTANT PEST CONTROL



## Naturally Derived Chemistry

Qcide™ is a natural compound and Flavocide™ is a 'nature identical mimic' of a natural compound that can be mass produced



## Safe Chemistry

Excellent safety profile based on data generated to date. Low toxicity to bees & beneficial insects (5000 times less toxic to bees than neonicotinoids)



## Efficacy

Testing to date confirms potential for controlling resistant pests across multiple markets



## Novel Mode of Action

Operates via a novel Mode of Action, potentially addressing resistance to other classes of chemistry



## Scalability

Production processes are refined, scale-up in progress



## Synergies & Combinations

Proven synergy in combinations with synthetic pyrethroids – the most commonly used mosquito insecticides



## Control of Multiple Generations

Potential to impact pest populations by controlling adults and offspring



# CREATING MULTIPLE PRODUCT DEVELOPMENT OPPORTUNITIES

Bio-Gene can generate income and incremental company value as agreements are signed with commercial partners

Multiple Material Transfer Agreements provide the opportunity for agreements to be developed across various market segments with numerous commercial partners



# CURRENT PARTNER PROGRAMS



Significant market opportunities across distinct segments, demonstrating the flexibility of Bio-Gene's technology.

Other evaluation programs are underway via Material Transfer Agreements



## Stored Grain pest Evaluation

Substantial market opportunity, with estimated losses of up to **70%** of grain in storage attributed to pests across global markets. Global grain protectant market currently valued at approx. A\$1 billion p.a. and growing\*.

Stage 3 (field) testing has commenced to assess residual efficacy, with results anticipated end of year

OUR PARTNERS



## Mosquito Control Evaluation

Evaluating Flavocide and Qcide for use in public health mosquito control in North, South and Central America

Expect to test lead formulations on target species in field environments very soon

The US market for chemical control of mosquitos is currently valued at approximately US\$200 million

OUR PARTNERS



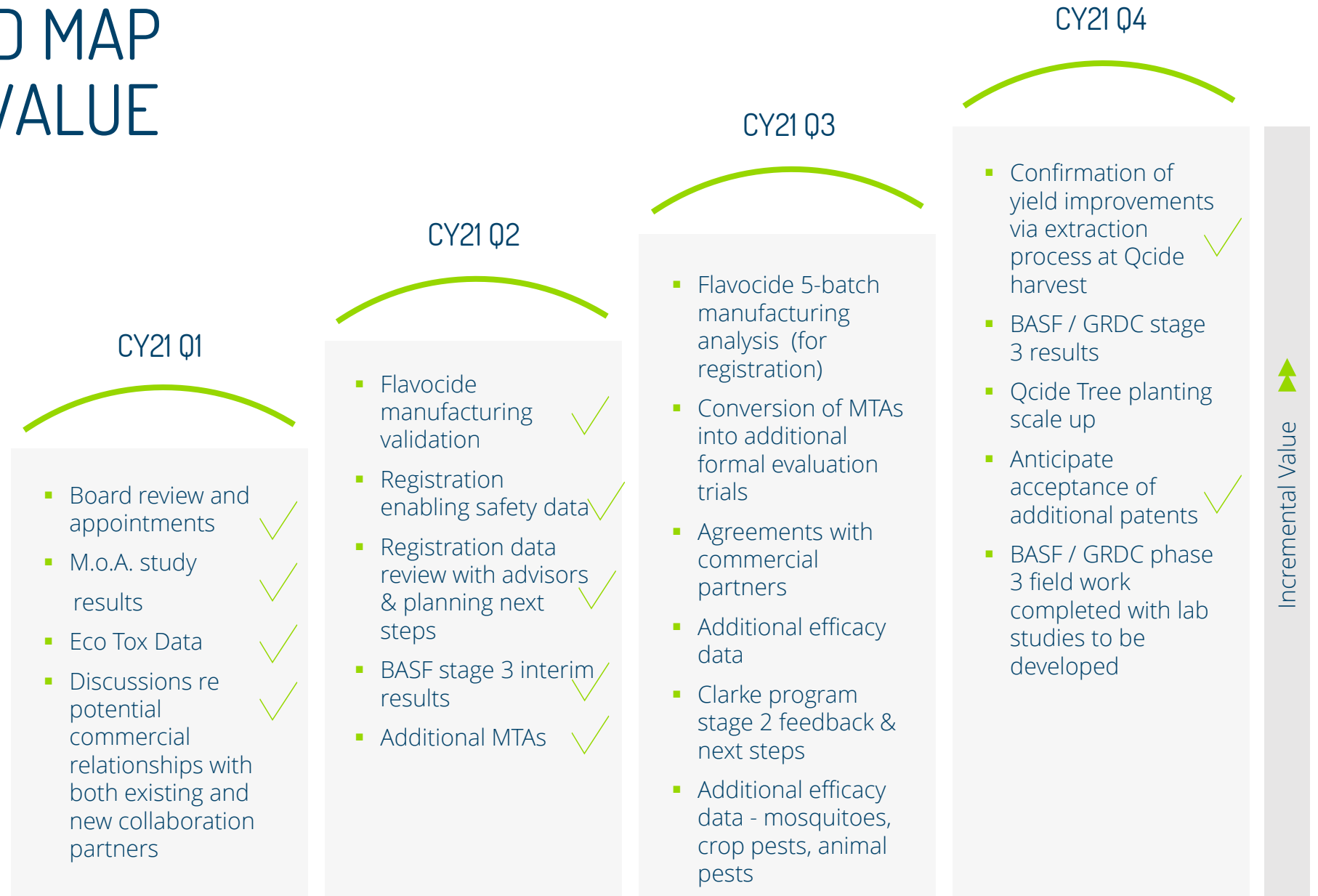
\* <https://www.researchandmarkets.com/reports/4744816/grain-protectants-global-market-outlook2017>

# A CLEAR ROAD MAP FOR ADDING VALUE

## SHORT TERM

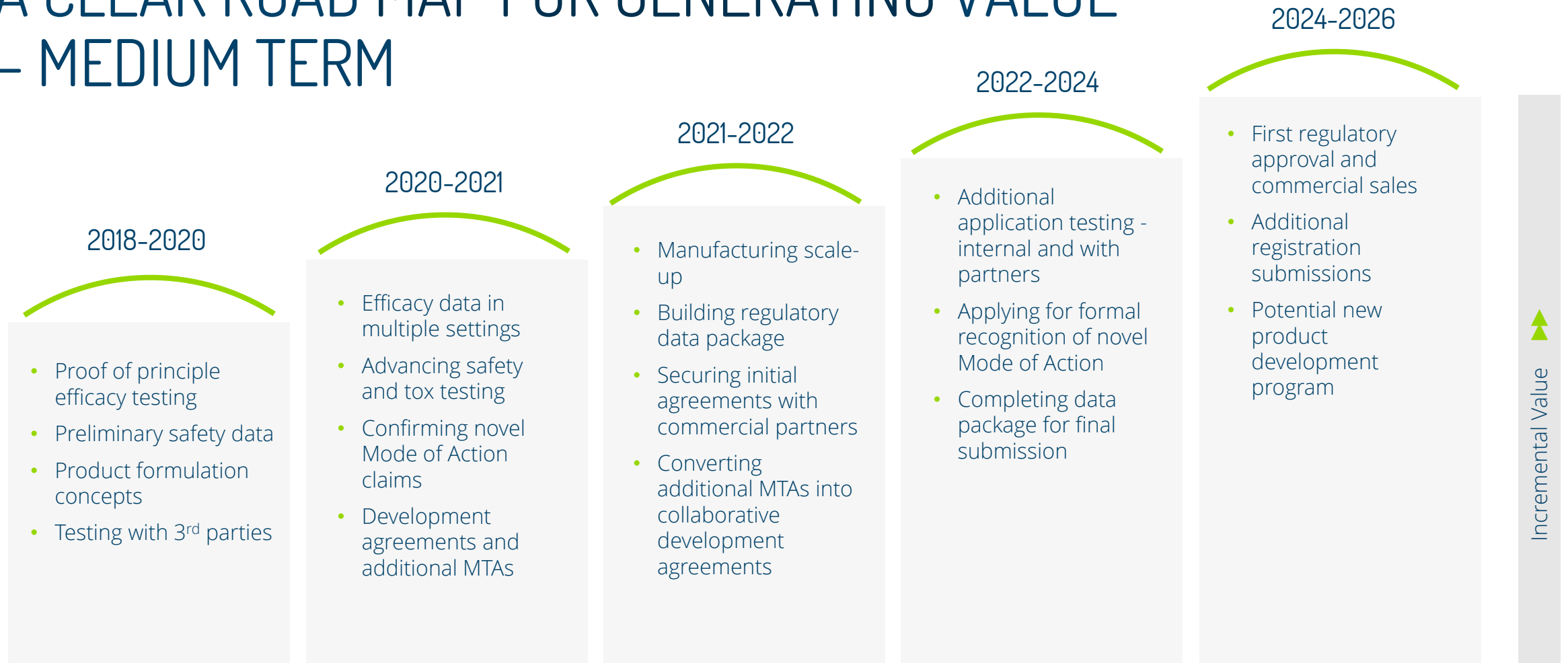


A number of key milestones and value-adding activities continue to improve the overall value of BGT technology





# A CLEAR ROAD MAP FOR GENERATING VALUE – MEDIUM TERM



POTENTIAL UPFRONT AND MILESTONE PAYMENTS, LICENSING FEES



AND ROYALTIES

# FUNDING POSITION

Shares on issue

**153,633,357**

Market capitalisation

**\$25.3 million<sup>1</sup>**

As at June 30, 2021,  
Cash on hand

**A\$3.9 million**

Provides working capital  
needs on budgeted  
activities until

**June 2022**

1. @16.5 cents per share

## Sources of future funding:



Development  
and commercial  
partnerships



Industry  
organisations



Government  
grants



Capital markets



Philanthropic  
organisations  
focused on public  
health solutions

# KEY INVESTMENT HIGHLIGHTS

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## Proprietary insecticide technology

Naturally derived chemistry, with novel mode of action



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Expanding efficacy, toxicity and manufacturing data to support international regulatory submissions – Excellent safety profile



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## Large addressable markets

where insecticide resistance is a growing problem



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## Commercial partnership strategy

provides multiple opportunities to demonstrate and generate near-term value, with several partnerships already in place



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Experienced and motivated management team



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