

## BIO-GENE DECEMBER 2020 QUARTERLY UPDATE

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- **Positive progress across key value generating milestones outlined at AGM**
- **Successful completion of additional toxicology studies to support international registration requirements**
- **Commencement of BASF/GRDC stage 3 field trials with results expected Q3 2021**
- **Commencement of Stage 2 of Clarke Mosquito product development program with results expected Q2 2021**
- **Ongoing restructure of Board including appointment of Non-executive Director, Peter Beetham**
- **Further efficiencies identified for the manufacturing processes of both Flavocide™ and Qcide™**
- **Strong cash position as at 31 December 2020 of \$5.0 million**

Bio-Gene Technology Limited (ASX: BGT, 'Bio-Gene' or 'the Company'), an agtech development company enabling the next generation of novel insecticides, today announced an update on its activities for the quarter ending 31 December 2020.

Bio-Gene Chief Executive Officer and Managing Director, Richard Jagger said: "As presented at our AGM in November, Bio-Gene's focus is to develop innovative and safe insecticides in partnership with leading players in the agrochemical and public health sectors. Our objective is to generate multiple revenue streams from technology licensing fees, milestone payments and royalties by:

- Generating the data required by regulatory bodies worldwide to enable us to achieve and own the registrations on our active ingredients;
- Collaborating with commercial partners on product development, marketing and distribution;
- Developing proprietary manufacturing and production know-how;
- Continuing to build a large and product focused patent and proprietary rights portfolio; and
- Continuing to undertake research to identify additional applications of our technology.

"Advancing these key elements is critical for the future success of the company and the ability to realise value for our shareholders. Therefore, the primary focus during the quarter was to progress our projects in relation to these key factors."

### DEVELOPMENT OF ACTIVE INGREDIENT INTERNATIONAL REGISTRATION PACKAGE

#### Toxicity / registration enabling studies

In December 2020, the Company announced positive results from preliminary soil eco-toxicity testing studies on Flavocide. These studies positively build on the previous eco-toxicity studies performed on a range of organisms to further profile the effects of Flavocide on non-target organisms within soil-based ecosystems and are part of the strategic development of registration enabling data identified under the guidance of our regulatory consultants including toxicologist advisor Dr. Andrew Bartholomaeus.

Subsequent to the end of the quarter, we completed additional studies in January on the Mallard Duck and Rainbow trout – two important benchmark species. These results continue to provide evidence to support a strong safety profile for products containing Flavocide. Most importantly, the data will also aid product registrations and support promotion of Bio-Gene products to potential commercial partners.

**Manufacturing**

As reported at the 2020 AGM, the Flavocide manufacturing process has been successfully progressed from lab scale to pilot industrial scale. Bio-Gene, together with its manufacturing partner, Boron Molecular, with the support of our manufacturing and chemical engineering advisor, Neil Anderson, is currently working on the production of 5 successive batches of material which will be used to undertake a 5-batch analysis. A 5-batch analysis is a key component of the process as it is a critical part of our registration data package, demonstrating that the material can be consistently manufactured. This work will also provide material for ongoing testing.

In November 2020 a number of enhancements to the oil extraction process for Qcide were successfully field tested as part of the annual harvest. The testing program occurred under the guidance of James Cook University which manages the measurement and analysis of data generated during the extraction process. Pleasingly, the enhancements delivered a higher percentage of extraction of total oil content, at a faster rate, resulting in an improvement in our cost structure for this product.

**EFFICACY: LEAD PRODUCT DEVELOPMENT AREAS****Long term stored grain product efficacy – working with BASF and GRDC**

In November 2020, Bio-Gene commenced Stage 3 of its four-way collaborative research program relating to stored grain pest control with BASF, the world's leading chemical company; GRDC, Australia's national grains research, development and extension investment body; and Queensland Department of Agriculture and Fisheries (DAF), an industry recognised leader in the field of stored grain pests research.

Stage 3 field testing will extend over a nine-month period, with periodic assessments at 0, 3, 6 and 9 months after treatment. Following the results announced on 26 March 2020 that Flavocide was able to control key stored grain pest, the Lesser Grain Borer, for over 13 months (both in field and laboratory work), the Company is optimistic about the outcome for Stage 3 testing. We will continue discussions about future commercial arrangements whilst the Stage 3 testing is underway.

Market Reports estimate the global use of insecticides used to control pests in stored grain was around US\$550 million in 2017 and is expected to grow very quickly to over US\$900 million by 2026\*. Globally over 2,765 million tonnes of grain are produced each year\*\*, and significantly increasing quantities are destined to spend time in storage prior to use as growers and grain marketers aim to achieve the best prices for grain commodities, which can be affected by the time of selling. While Australia may only represent around 3% of global grain production, and 7% of global export, we have significant world-wide expertise in researching the issues of resistance to insecticides that effect stored grain pests, and our Australian-based program is an ideal platform for developing globally applicable products.

**Public Health - working with Clarke on mosquito control**

Work on the second-stage partnership with Clarke - to develop both Flavocide and Qcide for use in public health mosquito control in North, South and Central America - commenced in August 2020. The first step in this study involves evaluating different solvents, or potential carriers of our molecules, to understand which options will offer the highest potential for efficacy and commercial opportunity for mosquito control. Our ongoing project review meetings with Clarke are very positive and will prepare us for the second step which will involve development of formulation prototypes. We are expecting this current stage of the program to conclude during Q2 2021

In 2017, the World Health Organisation estimated over 50% of the world's population is at risk to vector borne diseases, and the worldwide insecticide market in public health to be around \$US4 billion per year. The Innovative Vector Control Consortium (IVCC) notes that "mosquito resistance to current insecticides is threatening the huge gains made so far in reducing the deaths from disease spread by mosquitoes and therefore we desperately need effective chemistry with modes of action new to public health to combat these resistant mosquitoes and enable rotation with other products".

### **Material Transfer Agreements**

Whilst continuing to support our leading opportunities in stored grain and mosquito control, we are also working closely with our other potential partners who are evaluating Bio-Gene's products under Material Transfer Agreements (MTAs). It is important that we allow potential partners to test our technology in their own facilities to help them identify the value and market potential in applications that are important to them. These agreements ensure that Bio-Gene's Intellectual property is secure, and that we gain access to the data generated.

We are particularly encouraged by progress made in new potential market segments as well as new geographies for existing market segments. Early success for this strategic approach has been identified in the projects with BASF and Clarke, and we remain confident that this work will lead to additional formal partner agreements which will be pursued over the coming months. To support the potential to expand the market access for our products, we continue to conduct internal efficacy evaluations of our products with the aim of supporting discussions with additional partners and new applications. During the reporting period we signed one additional Material Transfer Agreement.

### **EFFICACY: INTERNAL PROGRAMS**

#### **Ongoing Research Program at Purdue University**

The Company has continued the relationship with Purdue University, and has engaged the University under the guidance of Professor Catherine Hill to conduct studies which will develop quantitative data to support observations we have seen when our target insects receive a "sub-lethal dose" (i.e. a dose that does not kill them). The potential to impact feeding or breeding of these individuals could be of great economic importance, and solid scientific data will support our discussions with potential commercial partners across a wide range of applications. We note that while the University's scientific laboratories are still able to function during the COVID pandemic, there have been some delays caused by the required re-configuration of the facilities, and the staggering of work forces to ensure the safety of all staff. This testing is expected to commence in Q2 of 2021 and run over that quarter.

#### **Ongoing New Applications Research**

The company has engaged with leading contract research organisations based in Europe, USA and Australia, which have commenced a range of studies designed to support and build upon previous internal studies, identify new market opportunities, and to further de-risk the technology. Such studies will be very helpful in our on-going conversations with potential commercial partners and will put us in a stronger position when negotiating commercial deals in the future.

### **BUILDING OUR EXPERTISE AND EXPERIENCE**

#### **Board of Directors**

As reported at the AGM, the Company has assessed the skills matrix required to meet the needs of our evolving business. In particular we identified the need to obtain Board level expertise in the form of experienced agtech development from early stage to registration and beyond. In December 2020, the Company was very pleased to announce the appointment of Dr. Peter Beetham as a Non-executive Director.

Dr. Beetham has over 30 years of experience in the bio-agriculture community, with a passion for moving technology to commercial application. He has a broad cross-section of technical, regulatory, commercial, intellectual property licensing and capital markets experience and a successful track record of developing agricultural biotechnology through to commercial licensing outcomes.

Dr. Beetham's appointment represents the commencement of the review and renewal of the board structure following the retirements of Messrs Brumley and Rumble. The Board is continuing to progress discussions – and the due diligence process – with other potential Board candidates.

#### **CEO**

CEO Mr Richard Jagger has moved to a full-time role with the Company, having previously been engaged on a four-day week basis. This will facilitate increased management focus across the range of business development and commercial partnership activities, as well as providing for closer levels of market engagement.

#### **INTELLECTUAL PROPERTY**

Two of our patent applications have now entered into the National Phase. These patent applications cover specific applications of platforms in the control of resistant pest populations and, when granted, will give us patent protection in our major target markets to 2039. These applications are now undergoing examination in various jurisdictions around the world. Completion of examination and granting is expected to take between 18-36 months. These patents provide increased protection to our technology and support the investment we are making to develop a valuable, commercial outcome.

#### **COVID-19**

As stated previously, COVID-19 has had no significant impact on the Company's business processes or commercialisation strategy, other than delays experienced by some of the research laboratories testing our products. These delays are a result of careful evaluation and realignment of the procedures and operating protocols of each lab. These organisations are now comfortable they can carry out agreed testing in a way that ensures the safety of their people, and the integrity of the results. Where there may be some delay in the completion of certain testing, the company is confident in the determination of each company to complete their testing programs.

#### **CASH POSITION**

As at 31 December 2020, Bio-Gene held \$5.0 million in cash, which based on current plans, provides the Company with sufficient cash to operate beyond 12 months. During the quarter, the Company received R&D rebates from the Australian government to the value of \$437,000.

Approved for release by the Board of Directors.

- ENDS -

**For further information, please contact:**

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**About Bio-Gene Technology Limited**

Bio-Gene is an Australian agtech company enabling the next generation of novel insecticides. Bio-Gene's novel platform technology is based on a naturally occurring class of chemicals known as beta-triketones.

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 crop protection and storage, public health, consumer applications and animal health. The Company's aim is to develop and commercialise a broad portfolio of targeted insect control and management solutions.

**Flavocide™ and Qcide™** are trademarks of Bio-Gene Technology Limited.

\* <https://www.researchandmarkets.com/reports/4744816/grain-protectants-global-market-outlook-2017>

\*\* <http://www.fao.org/worldfoodsituation/csdb/en/>

## Appendix 4C

### Quarterly cash flow report for entities subject to Listing Rule 4.7B

**Name of entity**

Bio-Gene Technology Limited

**ABN**

32 071 735 950

**Quarter ended ("current quarter")**

31 December 2020

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (6 months) \$A'000
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers	-	40
1.2 Payments for		
(a) research and development	(288)	(546)
(b) commercialisation expenses	(49)	(116)
(c) management administration expenses	(30)	(78)
(d) directors' expenses	(39)	(85)
(e) professional services	(59)	(83)
(f) intellectual property	(5)	(65)
(g) administration and corporate costs (see note 6)	(32)	(55)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	10	23
1.5 Interest and other costs of finance paid	-	-
1.6 Income taxes paid	-	-
1.7 Government grants and tax incentives	437	475
1.8 Other (provide details if material)	-	-
<b>1.9 Net cash from / (used in) operating activities</b>	<b>(55)</b>	<b>(490)</b>

<b>2.</b>	<b>Cash flows from investing activities</b>		
2.1	Payments to acquire or for:		
	(a) entities		
	(b) businesses		
	(c) property, plant and equipment		
	(d) investments		
	(e) intellectual property		
	(f) other non-current assets		
2.2	Proceeds from disposal of:		
	(a) entities		
	(b) businesses		
	(c) property, plant and equipment		
	(d) investments		
	(e) intellectual property		
	(f) other non-current assets		
2.3	Cash flows from loans to other entities		
2.4	Dividends received (see note 3)		
2.5	Other (provide details if material)		
<b>2.6</b>	<b>Net cash from / (used in) investing activities</b>	<b>0</b>	<b>0</b>

<b>3.</b>	<b>Cash flows from financing activities</b>		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	-	-
3.2	Proceeds from issue of convertible debt securities	-	-
3.3	Proceeds from exercise of options	-	-
3.4	Transaction costs related to issues of equity securities or convertible debt securities	-	(21)
3.5	Proceeds from borrowings	-	-
3.6	Repayment of borrowings (lease)	(2)	(7)
3.7	Transaction costs related to loans and borrowings	-	-
3.8	Dividends paid	-	-
3.9	Other (provide details if material)	-	-
<b>3.10</b>	<b>Net cash from / (used in) financing activities</b>	<b>(2)</b>	<b>(28)</b>

## Quarterly cash flow report for entities subject to Listing Rule 4.7B

<b>4.</b>	<b>Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1	Cash and cash equivalents at beginning of period	5,061	5,522
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(55)	(490)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	-	-
4.4	Net cash from / (used in) financing activities (item 3.10 above)	(2)	(28)
4.5	Effect of movement in exchange rates on cash held	-	-
<b>4.6</b>	<b>Cash and cash equivalents at end of period</b>	<b>5,004</b>	<b>5,004</b>

<b>5.</b>	<b>Reconciliation of cash and cash equivalents</b> at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	<b>Current quarter \$A'000</b>	<b>Previous quarter \$A'000</b>
5.1	Bank balances	12	10
5.2	Call deposits	592	151
5.3	Bank overdrafts	-	-
5.4	Other (Term Deposits)	4,400	4,900
<b>5.5</b>	<b>Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>5,004</b>	<b>5,061</b>

<b>6.</b>	<b>Payments to related parties of the entity and their associates</b>	<b>Current quarter \$A'000</b>
6.1	Aggregate amount of payments to related parties and their associates included in item 1	155
6.2	Aggregate amount of payments to related parties and their associates included in item 2	N/A
<i>Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments.</i>		

Note 6.1: Director's fees paid to Directors or their related entities.



## Quarterly cash flow report for entities subject to Listing Rule 4.7B

<b>7. Financing facilities</b>	<b>Total facility amount at quarter end \$A'000</b>	<b>Amount drawn at quarter end \$A'000</b>
<i>Note: the term "facility" includes all forms of financing arrangements available to the entity. Add notes as necessary for an understanding of the sources of finance available to the entity.</i>		
7.1 Loan facilities	N/A	N/A
7.2 Credit standby arrangements	N/A	N/A
7.3 Other (please specify)	N/A	N/A
7.4 <b>Total financing facilities</b>	<b>N/A</b>	<b>N/A</b>
7.5 <b>Unused financing facilities available at quarter end</b>		<b>N/A</b>
7.6	Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.	

<b>8. Estimated cash available for future operating activities</b>	<b>\$A'000</b>
8.1 Net cash from / (used in) operating activities (item 1.9)	(55)
8.2 Cash and cash equivalents at quarter end (item 4.6)	5,004
8.3 Unused finance facilities available at quarter end (item 7.5)	-
8.4 <b>Total available funding (item 8.2 + item 8.3)</b>	<b>5,004</b>
8.5 <b>Estimated quarters of funding available (item 8.4 divided by item 8.1)</b>	10
<i>Note: if the entity has reported positive net operating cash flows in item 1.9, answer item 8.5 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.5.</i>	
8.6 If item 8.5 is less than 2 quarters, please provide answers to the following questions:	
8.6.1 Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?	
Answer:	
8.6.2 Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?	
Answer:	
8.6.3 Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?	
Answer:	
<i>Note: where item 8.5 is less than 2 quarters, all of questions 8.6.1, 8.6.2 and 8.6.3 above must be answered.</i>	

## Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date: 29 January 2021

Authorised by: The Board of Directors  
(Name of body or officer authorising release – see note 4)

## Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standard applies to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – eg Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.
6. Net movements in GST are included in this item.
7. Prior Quarter Corrections. Immaterial minor errors and reallocations of expenses from previous quarter reports are corrected on a year to date basis. Movements disclosed for the current quarter have been correctly calculated.