

## BIO-GENE JUNE 2020 QUARTERLY UPDATE

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- **Strong progress made on commercialisation strategy**
- **Successful completion of stage one of the joint research program with BASF and GRDC for stored grain pest control**
- **Partnership with Clarke for Public Health applications executed**
- **\$2.83 million raised via private placement and a Share Purchase Plan**
- **Strong cash position as at 30 June 2020 of \$5.5 million**

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, today announced an update on its activities for the quarter ending 30 June 2020, and to date.

Bio-Gene Chief Executive Officer and Managing Director, Richard Jagger said: "During the quarter, the company made significant progress on the commercialisation strategy. There are now two partnerships underway across both grain storage and public health reflecting the broad potential of Bio-Gene's proprietary technology. With eight Material Transfer Agreements now in place, we are confident that there will be opportunity to announce further partnerships during the current financial year. We were also pleased to secure additional funds via a Placement and Share Purchase Plan."

### **Strengthened Balance Sheet**

On 26 May 2020, Bio-Gene announced the successful completion of a \$2.4 million capital raise via a placement to sophisticated and professional investors at \$0.155 per share as well as \$428,000 via a Share Purchase Plan from existing Shareholders. The Company was delighted with the support from both current and new investors.

### **Public Health**

On 23 April 2020, Bio-Gene announced that it had signed a partnership with Clarke to develop both Flavocide and Qcide for use in public health mosquito control in North, South and Central America. Clarke, which is based in the US, is the largest vertically integrated company serving the public health mosquito control market; and the partnership follows positive results from their internal findings of testing Flavocide and Qcide.

This agreement with Clarke has the opportunity to expand into other markets and is very valuable for our discussions with other stakeholders including for example NGOs and philanthropic organisations, to further develop commercial opportunities in the public health space.

Work on this project was delayed due to COVID-19 but is planned to commence in early August.

### **Stored Grain**

Bio-Gene is currently undertaking a four-way collaborative research program relating to stored grain pest control. The four-way partnership includes Bio-Gene; BASF, the world's leading chemical company; GRDC, Australia's national grains research, development and extension investment body; and Queensland DAF, recognised experts in the field of stored grain pests. The research program which began in January 2020 is assessing Bio-Gene's technology in combination with other chemical groups for control of the full range of key stored grain pests.

In April 2020, Bio-Gene announced that the program completed Stage 1, which identified the optimum combination of Flavocide with existing compounds for control of the most common, and highly resistant stored grain pest, the Lesser grain borer. The results of this stage, guiding treatment modifications for evaluation on other major pests of stored grain, has the aim of developing one product combination that can control the most significant five pest

species. Stage 2 commenced in May and is anticipated to take approximately three months to complete. Stage 3, comprising of field trials, will then follow to determine the residual efficacy of the target product combination.

The largest natural threat to the safe storage and distribution of grains is insect infestation. There is currently no single chemistry that controls all the major pests. Furthermore, the incidence of resistance to existing chemistries is rising in Australia, and around the world. Bio-Gene's nature identical molecule Flavocide has the potential to create formulations that will enable control of the full range of pests including those resistant to other classes of chemistry.

### **Eco-Toxicity**

A key achievement during the quarter was the release of positive results from trials relating to eco-toxicity.

The first announcement related to positive results from preliminary aquatic eco-toxicity studies, undertaken with technical grade flavesone, the active constituent contained in Flavocide. The studies were performed on three aquatic species, Guppy (*Poecilia reticulata*), Water flea (*Daphnia magna*) and freshwater algae (*Pseudokirchneriella subcapitata*). These represent key target species to indicate the environmental impact from the introduction of a pesticide to an aquatic environment. These studies are key to further profiling and understanding the potential hazards posed by products containing flavesone when released into the environment, with particular relevance to outdoor uses such as for mosquito control and crop protection.

The results of these studies indicate that no adverse effects were observed in any species from exposure to Flavocide at the highest doses tested, including the maximum test dose prescribed by the regulatory authorities. Subject to the outcome of further definitive testing, these preliminary data indicate that flavesone would not have a negative impact on non-target aquatic organisms and would fall within a favourable category of environmental hazard as defined by the regulatory authorities. These data will also assist the setting of doses for the next stage of more definitive acute eco-tox studies that will include testing of additional non-target terrestrial and aquatic species representative of additional organisms that are likely to be exposed to Flavocide products when used in targeted use patterns.

The second announcement related to preliminary results from avian eco-toxicity studies, again undertaken with technical grade flavesone, the active constituent contained in Flavocide. The studies were performed on Japanese Quail (*Coturnix japonica*); representing a key test species to assess the environmental impact from the introduction of an insecticide to the environment. These studies are pivotal to further profiling and understanding the safety profile of products containing flavesone when released into the environment, with particular relevance to outdoor uses such as for public health and crop protection.

The studies involved administering Flavocide technical to birds at a range of dose levels to accurately determine the acute oral toxicity effects. Based on a five-step scale used to classify pesticides into toxicity categories for terrestrial and aquatic organisms, the trial determined Flavocide technical was 'moderately toxic' and therefore falls into the middle toxicity category for this species. A moderately toxic classification is well within the range of currently registered insecticides and thus a positive outcome in terms of expected non-target impact assessment for registration.

### **Manufacturing**

The company has continued the scale-up program of Flavocide manufacture, under a development agreement with Boron Molecular Pty Ltd. Phase One of the project has been completed, which has delivered an improved standard operating procedure for synthesis of the technical grade material with improvements in yield and purity. The next phase will involve production on a larger scale with dedicated production equipment, which also aims to produce

batch analysis data to support product registration, as well as representative commercial grade material to use in future toxicological and product chemistry testing.

Our Qcide manufacturing program has also seen significant developments, and with the guidance of James Cook University engineering staff, we are improving the oil production and extraction processes. Another JCU project aims to deliver cloned trees with optimised oil and active ingredient levels within the leaves of the trees to maximise Qcide oil production from plantation areas.

### **Pathway to Commercialisation**

In May 2020, Bio-Gene signed an additional material transfer agreement (MTA) with a European-based organisation focused on consumer applications in home and garden. There are currently eight MTAs in place across all four of our target markets: Crop Protection, Grain Storage, Public Health and Consumer Products which provides Bio-Gene with a number of opportunities to enter into further commercial partnerships. Furthermore, we have several other discussions underway with other potential commercial partners. Under these MTAs, companies have received samples of Flavocide and Qcide and are undertaking their own testing.

### **COVID-19**

To date COVID-19 has had no significant impact on the Company's business processes or commercialisation strategy. However, due to continued government lockdowns in various jurisdictions the pandemic has resulted in delays in some of the research programs. Pleasingly, at this stage there has not been an impact on the research work being undertaken by Queensland DAF in relation to the collaborative project with BASF and GRDC on grain storage pests.

### **Cash Position**

As at 30 June 2020, Bio-Gene held \$5.5 million in cash, which based on current plans, provides the Company with sufficient cash to operate well beyond 12 months.

Due to the healthy cash position as well as continuing discussions from potential sources of non-dilutive funding the Company has decided to not place the balance of the SPP shortfall at this stage and focus on continuing to develop partnerships in key market segments.

### **Conclusion**

Bio-Gene's proprietary technology is being developed as a next generation insecticide to address the global problem of insecticide resistance and toxicity.

Bio-Gene Chief Executive Officer and Managing Director, Richard Jagger said: "Many of the insecticide classes currently in use have toxicity profiles that pose mounting human and environmental problems, especially in agriculture where both crops and livestock can be continually exposed to these compounds. In testing to date, Flavocide has presented with a positive relative safety profile including being found to be up to 5,000 times safer to bees by oral ingestion compared to other chemical products, notably the neonicotinoids, that are generally associated with bee toxicity. With the global insecticide market valued at in excess of US\$32 billion per annum, there is real potential to disrupt the current paradigm with an insect control solution that is targeted, safer, has low environmental impact and is cost effective to use.

Approved for release by the Chairman of the Board.

- ENDS -

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E: [tchapman@henslow.com](mailto:tchapman@henslow.com)**About Bio-Gene Technology Limited**

Bio-Gene is an Australian agtech company enabling the next generation of novel insecticides to address the global problems of insecticide resistance and toxicity. 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.

## 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")**

30 June 2020

<b>Consolidated statement of cash flows</b>	<b>Current quarter \$A'000</b>	<b>Year to date (.....months) \$A'000</b>
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers	43	123
1.2 Payments for		
(a) research and development	(347)	(1,368)
(b) commercialisation expenses	(52)	(247)
(c) management administration expenses	(31)	(137)
(d) directors' expenses	(44)	(189)
(e) professional services	(27)	(358)
(f) intellectual property	(172)	(187)
(g) administration and corporate costs (see note 6)	(9)	(285)
1.3 Dividends received (see note 3)		
1.4 Interest received	12	66
1.5 Interest and other costs of finance paid	-	(1)
1.6 Income taxes paid		
1.7 Government grants and tax incentives	115	939
1.8 Other (provide details if material)		
<b>1.9 Net cash from / (used in) operating activities</b>	<b>(512)</b>	<b>(1,644)</b>

<b>2. 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 Net cash from / (used in) investing activities</b>	<b>0</b>	<b>0</b>

<b>3. Cash flows from financing activities</b>		
3.1 Proceeds from issues of equity securities (excluding convertible debt securities)	2,829	2,829
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	(148)	(148)
3.5 Proceeds from borrowings		
3.6 Repayment of borrowings (lease)	(2)	(14)
3.7 Transaction costs related to loans and borrowings		
3.8 Dividends paid		
3.9 Other (provide details if material)		
<b>3.10 Net cash from / (used in) financing activities</b>	<b>2,679</b>	<b>2,667</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	3,355	4,499
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(512)	(1,644)
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)	2,679	2,667
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>5,522</b>	<b>5,522</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	32	27
5.2	Call deposits	190	228
5.3	Bank overdrafts	-	-
5.4	Other (Term Deposits)	5,300	3,100
<b>5.5</b>	<b>Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>5,522</b>	<b>3,355</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	161
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.

<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)	(512)
8.2 Cash and cash equivalents at quarter end (item 4.6)	5,522
8.3 Unused finance facilities available at quarter end (item 7.5)	-
8.4 Total available funding (item 8.2 + item 8.3)	<b>5,522</b>
8.5 <b>Estimated quarters of funding available (item 8.4 divided by item 8.1)</b>	11
<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: 23 July 2020

Authorised by: By the Chairman of the Board  
(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.