

## Bio-Gene achieves Q3 key milestones with signed binding term sheet with STK, expansion of US patents and commercial agreement extension for mosquito control

### Quarterly Activities Report and Appendix 4C

#### Q3 FY23 Highlights

- **Signed binding term sheet with STK Bio-ag Technologies (STK) for collaboration to develop, register and commercialise Qcide™ for crop protection applications**
  - Collaborative discussions between STK and Bio-Gene have been on-going, working towards the completion of the STK long form agreement
  - The partnership continues to progress development and registration processes for Qcide
- **US Patent Office (USPTO) issued Notice of Allowance to grant an additional patent for the use of flavesone and related molecules to control insecticide-resistant pests**
  - The US patent focused on Flavocide™ for control of insecticide-resistant pests
  - Extends previously limited coverage to control of *all* insecticide-resistant pests (insects and arachnids)
  - Patent will expire 2038
- **Board and Executive management changes include:**
  - Retirement of Director, James Joughin
  - Appointed new CFO and Company Secretary, Mr Rod Valencia
- **Received \$446,000 cash refund under the Australian Federal Government's R&D Tax Incentive Scheme**

#### Subsequent to quarter end

**A key commercial agreement extension with Clarke Mosquito Control (Clarke)** granting rights to develop and commercialise Flavocide for an additional mosquito control market segment in the United States and Cayman Islands:

- New segment focuses on residential mosquito control services on private properties
- The extension increases the market opportunity with Clarke by 150%, to total of US\$250 million.

**Announced research synergy study results with Flavocide and Qcide** offering significant new commercial opportunities for use with certain other insecticides against certain target insect species:

- Expands the possible commercial opportunities for Bio-Gene in the US\$31.1 billion global insecticide market<sup>1</sup> by providing industry benefits including:
  - lower dosage requirements leading to reduced cost application and improved environmental safety
  - extended use of patented, patent pending and post-patent products and offering increased efficacy against resistant pests
- Early stage results have already drawn interest from global companies with the recent signing of a new Material Transfer Agreement.

**Board and management changes include:**

- Managing Director and CEO, Richard Jagger advised he wishes to transition from the full time CEO role to an ongoing consultancy and advisory role once a replacement is found and he has provided a suitable hand over.
- Non-Executive Director Dr. Peter Beetham announced his resignation and will join the Bio-Gene Scientific Advisory Board.

Bio-Gene Technology Limited (**Bio-Gene** or the **Company**), an agtech development company enabling the next generation of novel insecticides, provides this update on activities for the quarter ended 31 March 2023 (Q3 FY2023), alongside the Company's Appendix 4C.

**Commenting on the Company's achievements over Q3 FY2023, CEO & Managing Director, Richard Jagger said:**

*"This quarter Bio-Gene met important milestones including a key partnership we expect will lead to several products in the near future, and increased patent protection opening more commercial opportunities in the long term.*

*"A key achievement was executing the binding term sheet with STK, a partnership that will further develop, register and commercialise Qcide for crop protection applications. Following an extensive 18-month internal review, STK is confident in Qcide's applicability and efficacy for crop protection. The term sheet allowed for 90 days to finalise terms of the commercial agreement. This is a complex document and both parties have agreed to allow additional time to ensure matters are addressed. We expect to be in a position to update the market further in the near future.*

*"We deeply value our partnership with STK, and the direct benefits we receive from the partnership. We now have access to both the expertise and financial support of a global leading developer and marketer of botanical based crop protection solutions, who will take our novel Qcide active ingredient through the rigorous and costly process of registration. We will work collaboratively to develop products and share in the commercial outcomes of Qcide products brought to market.*

*"Patent protection adds significant value to Bio-Gene, our current commercial partners, and prospects for securing future commercial opportunities. In March, we were pleased to receive from the US Patent Office an issued Notice of Allowance, the last major milestone in the complex patent application process. This allows for the grant of an additional new patent in the Flavocide portfolio, and more broadly relating to the use of flavesone and related molecules to control insecticide-resistant pests in the US. This is a fantastic outcome, strengthening our portfolio of multiple granted patents across target markets.*

*"The US presents a large market for our technologies, and we will leverage this patent with our existing and pending patents to continue to develop commercial applications for our products."*

**Signed binding term sheet with STK Bio-ag Technologies (STK) for collaboration to develop, register and commercialise Qcide for crop protection applications**

Bio-Gene signed a binding term sheet with STK on a global collaboration to develop, register and commercialise Qcide for crop protection applications.

Key terms of the agreement include:

- Bio-Gene grants STK a world-wide non-exclusive licence to develop Qcide technology for crop protection applications, as well as aquaculture, and professional turf and ornamentals markets
- STK funds all costs associated with securing the active ingredient registration for Qcide

- Bio-Gene has full access to active ingredient registration to support other commercial opportunities (crop and non-crop).

Under the agreement, STK commits to the major financial investment to fund the full registration costs relating to the Qcide active ingredient. This will include the required toxicology and ecotoxicity studies, generation of manufacturing data and preparation of the regulatory submission.

Both companies are evaluating the opportunity for Bio-Gene to act as sales agent for STK products in Australia and New Zealand.

To date, the STK partnership for Bio-Gene is the largest commercial arrangement entered to date and sets a precedent for further Qcide commercial agreements in the future.

Collaborative discussions between STK and Bio-Gene have been on-going, working towards the completion of the STK long form agreement.

### **US Patent Office (USPTO) issued Notice of Allowance to grant an additional patent for the use of flavesone and related molecules to control pesticide-resistant pests**

The USPTO issued a Notice of Allowance to grant a US patent covering the use of flavesone and related molecules to control insecticide-resistant pests. The patent application focused on Flavocide for control of insecticide-resistant pests.

The Notice of Allowance is the last key registration step, issued after a patent examiner has decided to issue the requested patent. The Notice of Allowance shows the application is complete and meets all requirements for the grant of a patent under US law.

Bio-Gene first submitted the patent application in July 2018, an international submission that included the United States. Patent submissions are long and complex, and to receive this Notice of Allowance in the US is a critical achievement in expanding BGT's patent portfolio.

### **Bio-Gene received cash refund of \$446,000 cash under the Australian Federal Government R&D Tax Incentive Scheme**

Under the Australian Federal Government's R&D Tax Incentive Scheme, Bio-Gene received \$446,000 cash refund. The R&D Tax Incentive Scheme is an Australian Government program under which companies cash refunds for eligible expenditure on research and development.

The cash refund will be used for working capital purposes to accelerate Bio-Gene's commercialisation and development programs.

### **Board and Executive management changes**

**Retirement of Director James Joughin** – Mr James Joughin advised his retirement from the Board due to increasing commitments associated with his Chairmanship and NED roles on other ASX companies. Subsequent to quarter end, James Joughin's retirement was announced effective as at 22 April 2023. Mr Andrew Guthrie will assume Chairmanship of Company's Audit and Risk committee from 22 April 2023.

**Appointment of CFO and Company Secretary** – Rod Valencia was appointed CFO and Company Secretary, commencing 24 April 2023.

## Operating Update

**Extension of Commercial Agreement with Clarke:** Extension of the Licence and Development Agreement with Clarke for the United States and Cayman Islands. Under the updated agreement, Clarke has expanded rights to explore, develop and commercialise an insecticide solution comprising the use of Flavocide by professional pest managers for the residential mosquito control segment, in addition to its current access agreement for the public health mosquito control market.

The US market opportunity with Clarke increased 150% with the extension, with total market valuation US\$250 million<sup>2</sup> annually for applications granted to Clarke.

In line with existing commitments, with respect to the extension of applications, Clarke commits to the on-going investment to develop and register costs for new end use products. The extension triggered a milestone payment to Bio-Gene, which will be used to support registration studies.

**Announced research synergy study results with Flavocide and Qcide:** Independent research confirms significant synergy results for both Flavocide and Qcide when used in combination with other commercially important insecticides against certain target insect species.<sup>3</sup>

Positive research results demonstrating synergy in combination can provide substantial commercial value to the US\$31.1 billion global insecticide industry<sup>1</sup>, including reduced application rates, lower-cost control, increased ability to tackle resistance, and extending the use of existing products within and beyond their patent life.

The results have attracted interest from global companies with Bio-Gene signing a new Material Transfer Agreement to assess commercial synergy opportunities.

Tests were undertaken by globally recognised research organisations including Purdue University; University of Florida; i2L Research; and cesar Australia. The data has been used to support patent applications for use of Bio-Gene products in combination.

Most recently in the range of studies, and over Q3, i2L Research conducted a Qcide combination study demonstrating synergy as part of ongoing testing regime. Latest testing by i2L<sup>4</sup>:

- Research with Qcide in combination with Pyrethrins vs housefly confirmed synergy
- Data supports the invention claimed in the patent application entitled *Improved pesticidal compositions and pest control methods* submitted in Australia in June 2022
- Supports commercial opportunities for Qcide combinations in flying insect control markets

### Q3 FY23 other operating activities:

- **Plant Breeder's Rights (PBR)**
  - Part 1 PBR applications were accepted in Australia for three Qcide producing superior tree varieties
  - A Qualified Person was appointed to assist Part 2 that will comprise generation of data on key phenotypic attributes including the chemical profile of Qcide oil
  - Strengthens IP protection and value of Qcide tree improvement and production technologies.
- **Production of Flavocide & Qcide**
  - Programs continued in Australia and India to further improve synthesis and scale-up production of Flavocide with a view to finalise the standard operating procedures (SOP) to facilitate engagement of a commercial toll manufacturer

- Results from late 2022 Qcide harvest and on-site experimentation further confirmed consistency of oil extraction process and chemical profile of Qcide oil that will set specification for regulatory purposes.

### Financial Update

As at 31 March 2023, Bio-Gene held \$3.6m in cash, a \$677k decrease over the quarter (31 December 2022 Cash \$4.3m). The cash position this quarter was partly supported by receipt of the R&D Tax Incentive from the Australian government of \$446k.

### Outlook

Bio-Gene remains focused on securing the active ingredient registrations for both Flavocide and Qcide.

Qcide registration is to be supported by STK, with a binding term agreement in place. Bio-Gene is working with STK to formalise the long form agreement, while continuing to progress development work with STK.

Patent protection is critical to strengthening Bio-Gene's value and negotiating position to secure commercial agreements with leading global partners. Bio-Gene will continue to apply and execute opportunities to gain domestic and international protection of IP.

Expanding commercial partnership agreements across multiple geographies and to different end-use markets is key to expanding our revenue potential and value creation. Strong validation for Flavocide has been received in Q4 following the successful commercial agreement expansions with Clarke.

As Bio-Gene progresses critical work across research, technology registration, patent protection, toll manufacturing and regulation, it is continuously strengthening its position in both current and prospective partnerships. Bio-Gene has several Material Transfer Agreements in place and is working closely with these parties to progress to commercial agreements.

### Commenting on the Company's outlook for the remainder of FY2023, CEO & Managing Director, Richard Jagger said:

*"In the US, we welcomed the expansion of our technology Flavocide with Clarke to an additional mosquito control segment focused on professional use of our product for residential mosquito control services on private properties. This is a significant expansion, increasing our commercial potential with Clarke to a US\$150 million market and further validates our technology in controlling mosquito populations.*

*"Vector borne diseases globally are growing, with WHO reporting that half the world is at risk and accounts for 25% of infectious diseases<sup>5</sup>. This significant global challenge is only exacerbated by climate change, as warmer temperatures increase the habitable environment for mosquitoes. We are working hard with our partner Clarke to address this significant global challenge, and with our novel Mode of Action active ingredient, hope to create effective insecticides and make a positive social impact on people's lives.*

*"We are excited by the results of a series of independent studies undertaken by globally recognised organisations that confirm significant synergy results for both Flavocide and Qcide with particular commercially important molecules.<sup>6</sup> The commercial opportunities created by these positive synergy results create lasting value for Bio-Gene and our partners on several levels, specifically by improving the potential of insect control in public health applications, food production efficiency and addressing pest resistance to existing products, a major global concern."*

### Business Update and March Quarterly Briefing

The business update and March quarterly briefing will be held on **Wednesday 3 May at 11:00am (AEDT)**.

The briefing will be hosted by Richard Jagger (CEO and Managing Director) and Peter May (Executive Director Research & Development) who will present an update on Bio-Gene and the Company's quarterly progress, followed by a Q&A session.

To participate, please register at:

[https://us02web.zoom.us/webinar/register/WN\\_pxcBhHtfRLaxw7rS4rn-Dw](https://us02web.zoom.us/webinar/register/WN_pxcBhHtfRLaxw7rS4rn-Dw)

After registering, you will receive a confirmation email containing information about joining the webinar.

Approved for release by the Board of Directors.

- ENDS -

### For further information, please contact:

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### About Bio-Gene Technology Ltd

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, animal health and consumer applications. 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.

### Sources

<sup>1</sup> US EPA 2017, WHO 2017, Zoetis & Provue Market Research, Markets & Markets

<sup>2</sup> *Global Mosquito Control Market, Research Report 2020, Forecast to 2026*

<sup>3</sup> Flavocide in spray/topical applications: with pyrethrins against houseflies (*Musca domestica*); with pyrethroid Permethrin against houseflies (*M. domestica*) and mosquitoes (*Aedes aegypti*); with pyrethroid alpha-Cypermethrin against aphids (*Myzus persicae*); with diamide Chlorantraniliprole against resistant diamondback moth (*Plutella xylostella*); with carbamate Pirimicarb against aphids (*M. persicae*); with organophosphate Dimethoate against aphids (*M. persicae*). Qcide in spray/topical applications: with pyrethrins against houseflies (*M. domestica*); with pyrethroid Permethrin against houseflies (*M. domestica*) and mosquitoes (*A. aegypti*) including resistant strains.

<sup>4</sup> In spray/topical applications: with pyrethrins against houseflies (*M. domestica*).

<sup>5</sup>"A global Brief on vector-borne diseases", WHO Report, 2014

<sup>6</sup>Flavocide: In spray/topical applications: with pyrethrins against houseflies (*Musca domestica*); with pyrethroid Permethrin against houseflies (*M. domestica*) and mosquitoes (*Aedes aegypti*); with pyrethroid alpha-Cypermethrin against aphids (*Myzus persicae*); with diamide Chlorantraniliprole against resistant diamondback moth (*Plutella xylostella*); with carbamate Pirimicarb against aphids (*M. persicae*); with organophosphate Dimethoate against aphids (*M. persicae*). Qcide, as above.

## 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 March 2023

Consolidated statement of cash flows	Current quarter \$A'000	Year to date \$A'000
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers	-	-
1.2 Payments for		
(a) research and development	(550)	(1,823)
(b) commercialisation expenses	(54)	(280)
(c) management administration expenses	(36)	(167)
(d) directors' expenses	(63)	(213)
(e) professional services	(121)	(152)
(f) intellectual property	(78)	(233)
(g) administration and corporate costs (see note 6)	(243)	(407)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	22	66
1.5 Interest and other costs of finance paid	-	-
1.6 Income taxes paid	-	-
1.7 Government grants and tax incentives	446	446
1.8 Other (provide details if material)	-	-
<b>1.9 Net cash from / (used in) operating activities</b>	<b>(677)</b>	<b>(2,763)</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	-	-
3.5	Proceeds from borrowings	-	-
3.6	Repayment of borrowings	-	-
3.7	Transaction costs related to loans and borrowings	-	-
3.8	Dividends paid	-	-
3.9	Other (share proceeds received in advance)	-	-
<b>3.10</b>	<b>Net cash from / (used in) financing activities</b>	<b>0</b>	<b>0</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	4,256	6,342
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(677)	(2,763)
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)	-	-
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>3,579</b>	<b>3,579</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	18	17
5.2	Call deposits	3,561	4,239
5.3	Bank overdrafts	-	-
5.4	Other (Term Deposits)	-	-
<b>5.5</b>	<b>Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>3,579</b>	<b>4,256</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	205
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>		

## 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
<b>7.4 Total financing facilities</b>	<b>N/A</b>	<b>N/A</b>
<b>7.5 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)	(677)
8.2 Cash and cash equivalents at quarter end (item 4.6)	3,579
8.3 Unused finance facilities available at quarter end (item 7.5)	-
<b>8.4 Total available funding (item 8.2 + item 8.3)</b>	<b>3,579</b>
<b>8.5 Estimated quarters of funding available (item 8.4 divided by item 8.1)</b>	<b>5</b>
<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: 27 April 2023

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.