

## **Bio-Gene moves towards commercialisation with significant synergy results and expanding additional markets for Flavocide®**

### **Quarterly Activities Report and Appendix 4C**

#### **Q4 FY23 Highlights**

- **Extended Commercial Agreement with Clarke Mosquito Control (Clarke) on Flavocide for an additional mosquito control market segment in the US and Cayman Islands**
  - New segment focuses on residential mosquito control services on private properties
  - Extension increases market opportunity by 150% to total US\$250 million
- **Grain Research & Development Corporation (GRDC) confirmed support for the continued development of Flavocide for use in grain storage**
- **Research programs confirm significant synergy results for both Bio-Gene's molecules, opening new commercial opportunities for use in combination with other commercially important insecticides**
- **Notice of Allowance issued by the US Patent Office to grant additional new patent in major global crop market**
  - Patent relates to use of Bio-Gene molecules to control highly damaging aphid pests in crops
- **Board changes:**
  - Appointed Non-Executive Directors Mr Alex Ding and Mr Christopher Ramsey
  - Non-Executive Directors Mr James Joughin and Mr Peter Beetham resigned
  - Announced retirement of Mr Robert Klupacs as Non-Executive Director and Chairman, effective 31 July 2023

#### **Subsequent to quarter end**

- **Signed Development and Licence Agreement with STK Bio-Ag Technologies (STK) formalising the existing binding term sheet**
- **Bio-Gene products selected for inclusion in US Center for Disease Control (CDC) funded vector control program targeting tick vector of Lyme disease.**
  - Program is coordinated by the Midwest Center of Excellence for Vector Borne Disease (MCE-VBD) with \$US10 million funding from the CDC
- **Senior Executive Changes:**
  - Appointment of Mr Tim Grogan as Managing Director and Chief Executive Officer effective 28 August 2023
  - Richard Jagger, the current Managing Director and CEO, to transition to an advisory role focused on stakeholder management of Bio-Gene's existing and future development partnerships following Tim Grogan's commencement date.

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 30 June 2023 (4Q FY2023), alongside the Company's Appendix 4C.

**Commenting on the Company's achievements over Q4 FY2023, CEO & Managing Director, Richard Jagger said:**

"Over the past quarter, we have executed several agreements with global commercial partners that provide a clear road map for commercialisation of our unique technology.

"Our collaboration with Clarke now includes an additional mosquito control market segment in the US and Cayman Islands for applications of our technology, increasing our targeted fields of use market opportunity with Clarke to US\$250m. The extension reflects Clarke's extensive research and financial commitment to our joint development program, emphasising novel formulations and application methods.

"We were thrilled to receive confirmation from the GRDC for their continued support for development, registration, and commercialisation of Flavocide in grain storage. GRDC's expertise, industry relationships, and regulatory knowledge are invaluable and key to helping us develop and commercialise Flavocide as we navigate important grain markets.

"Over the past few months results have been released from extensive research programs with our partners that further validate the commercial viability of both Qcide<sup>®</sup> and Flavocide.

"The positive synergy results we achieved during the quarter offer significant opportunities by broadening the scope of our products for use in combination with other important insecticides providing more effective pest control solutions. The demonstrated synergy unlocks the potential to gain commercial opportunities in the wider US\$31.1 billion global insecticide market. Undoubtedly, we are excited by these results, and reinforces the value of Bio-Gene's products' unique Mode of Action to provide more effective control and address resistance of pest to several important insecticide groups.

"We've strengthened our proprietary position and IP platform with the granting of a new patent allowance by the US patent office. As we advance our products in both crop and public health markets, patent protection plays a pivotal role in commercialising our technology. This achievement reinforces our commitment to delivering cutting-edge solutions in the significant crop protection market and solidifies our position as innovators in the field.

"Bio-Gene has evolved its board structure, appointing Alex Ding and Christopher Ramsay as Non-Executive Directors. These new appointments bolster Bio-Gene's capability and steer the company through the next critical phase of growth as we move towards commercialisation."

**Extended Commercial Agreement with Clarke on Flavocide for an additional mosquito control market segment**

Bio-Gene signed an extension of the License and Development Agreement with Clarke in the United States and Cayman Islands. Clarke has expanded rights to explore, develop and commercialise an insecticide solution using Flavocide for the residential mosquito control segment, in addition to its current access agreement for the public health mosquito control market.

The new segment focuses on residential mosquito control services on private properties, increasing the market opportunity with Clarke by 150%, with the new applications representing market opportunity of US\$150m, bringing the total fields of use market opportunity with Clarke to US\$250m.

Clarke made a milestone payment to Bio-Gene triggered by the extensions, which will be used to support registration studies. The additional market applications open more opportunities for commercial products, ultimately leading to higher potential revenues for Bio-Gene via royalty payments.

### **GRDC confirmed support for development, registration, and commercialisation of Flavocide in grain storage**

In May 2023, GRDC signed a Letter of Support re-affirming its support for Bio-Gene to achieve registration and commercialisation of Flavocide as a stored grain protectant in Australia.

The confirmation of support followed a collaborative research project between GRDC, Bio-Gene, BASF and QDAF that concluded in mid-2022. GRDC provided financial support to the project which tested the efficacy of Flavocide when used as a protectant insecticide to control grain storage pests, concluding that Flavocide combination treatments can effectively control five key stored grain pests (lesser grain borer, flour beetle, saw-toothed beetle, flat grain beetle and rice weevil) for up to 13 months which exceeds the current benchmark for commercialised insecticide products.

### **Research programs confirm significant synergy results for both Bio-Gene's molecules**

Independent research has confirmed significant synergy results for both Flavocide and Qcide when used in combination with other commercially important insecticides against certain target insect species.

Positive research results demonstrating synergy can provide substantial commercial value to the US\$31.1 billion global insecticide industry, including the potential for 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 studies were conducted by globally recognised research organisations including Purdue University, University of Florida, i2L Research, and cesar Australia. Results from earlier stages in the research program have already attracted interest from global companies with Bio-Gene signing a new Material Transfer Agreement to assess commercial synergy opportunities.

### **Notice of Allowance issued by US Patent Office (USPTO) to grant additional new patent in major global crop market**

In response to Bio-Gene's US patent application (No. 17/045,457), the USPTO issued a Notice of Allowance to grant a patent relating to the use of Bio-Gene's molecules to control highly damaging aphid pests in crops and extends patent protection for Bio-Gene's technology to 2040. Examination of additional patent applications in relation to control of aphid pests is continuing by other patent offices globally.

### **Operating Update (subsequent to quarter end)**

#### **Signed Development and Licence Agreement with STK formalising the existing binding term sheet**

Bio-Gene signed a Development and License Agreement with STK, an Israeli-based developer and marketer of botanical and hybrid crop protection solutions. This agreement formalises the existing binding term sheet between Bio-Gene and STK in which Bio-Gene grants STK a world-wide non-exclusive license to develop Qcide technology for crop protection applications, as well as aquaculture, professional turf and ornamentals markets.

STK will fully fund registration costs relating to the Qcide active ingredient. This includes registration-enabling studies covering product chemistry, mammalian toxicology, ecotoxicity, and environmental fate, to support product claims for use in crop protection applications in the field of use including in food crops.

While STK will have ownership of the resulting registrations, Bio-Gene will continue to own the IP relating to Qcide and gains unlimited access to the active ingredient registrations to support Bio-Gene's activities in all

markets, including crop protection, and exclusively in public health, animal health and consumer products. Bio-Gene can therefore work with other commercial partners to develop and commercialise products in all market segments, including those licenced to STK on a non-exclusive basis.

#### **Bio-Gene products selected to be included in US CDC funded vector control program**

Bio-Gene's technology, Flavocide and Qcide, have been selected to participate in a significant US program to address on-going issues of vector-borne diseases. The program is coordinated by the Midwest Center of Excellence for Vector Borne Disease (MCE-VBD) and funded by the CDC who will invest US\$10 million into the overall program over five years. The program involves a number of prominent United States universities, including Purdue University who have a significant history and knowledge of Bio-Gene's technology.

As part of the overall program, Bio-Gene will work with MCE-VBD researchers to understand how Flavocide and Qcide can be harnessed to control vector-borne disease, including those caused by tick-borne pathogens like *Borrelia burgdorferi* (Lyme disease) that is spread by the blacklegged or deer tick.

Bio-Gene will have access to the efficacy results to support product registrations, and to enable engagement with current and potential commercial collaborators.

#### **Q4 FY23 other operating activities**

- **Plant Breeder's Rights (PBR) update**
  - 3 PBR applications have now been confirmed by the PBR office, and Part 2 applications and associated supporting studies – comprising of laboratory and field studies – are now being planned
- **Production of Flavocide**
  - Audits and review of suitable production facilities for Flavocide production are being finalised. The Company is very pleased with the options on hand.
- **Production of Qcide**
  - The latest Qcide harvest conducted in July enabled the team to test a number of extraction modifications that will be incorporated into the Standard Operating Procedure.
  - The modifications allow for greater efficiency and improved oil extraction from leaf biomass.

#### **Financial Update**

As at 30 June 2023, Bio-Gene held \$2.99m in cash, a \$588k decrease over the quarter (31 March 2023 Cash \$3.58m). The cash position this quarter was partly supported by a \$149k payment from key commercial partner as a milestone payment from Clarke for the expansion of granted rights for an additional mosquito control market segment.

#### **Outlook**

Bio-Gene remains focused on the development, registration and commercialisation of Flavocide and Qcide.

The company is committed to progress the rigorous scientific research and development of its products, and will continue to work closely with key stakeholders including regulatory agencies, public health organisations and officials, universities and commercial partners to achieve use approvals and commercialiation of our technology.

Aligned to the clearly defined business model, securing commercial partnerships is pivotal. Bio-Gene will continue to explore expanding existng commerical oppourtunities with the current commercial partners, as recently achieved in Q4 with Clarke extending its Commercial Agreement on Flavocide for an additional mosquito control market segment. In addition, securing new commerical agreements will be a key focus, ensuring we exploit the full potential of our unique technology across multiple geographies and in the range of target end-use markets.

**Commenting on the Company’s outlook FY results, CEO & Managing Director, Richard Jagger said:**

“We’ve entered the first quarter of FY24 with two major developments with commercial and research partners including the formalisation of our agreement with STK. This represents a significant milestone for Bio-Gene as it secures the necessary investment for Qcide registration as well as granting us remarkable flexibility in our key target markets, allowing us to pursue commercial deals with Qcide in all markets.

“I’m also proud our technology was selected to participate in a significant US research program funded by the CDC addressing on-going issues of vector-borne diseases. As part of the overall program, specifically focused on tick-borne pathogens, studies with our products targeting the primary tick vector of Lyme disease, the most common vector-borne disease in the USA, will be conducted by Purdue University, a group that has significant history and extensive knowledge of both our molecules. This is a wonderful collaboration and importantly we gain access to the results to support programs and potential registrations with current and future commercial partners.

“In support of the Board’s evolution, I am thrilled Alex Ding has accepted the position of Chairman, following Robert’s retirement. Previously a partner at two leading Australian law firms, Alex has advised many large ASX, LSE and US listed companies, and is known for his expertise across mergers and acquisitions, capital markets and corporate finance.

“Finally, I’m delighted to welcome Tim Grogan as Bio-Gene’s Managing Director and CEO. Tim's leadership style and deep understanding of the biotechnology sector aligns perfectly with our company's mission and goals. I look forward to welcoming Tim in August and continuing to work with him in my new capacity focused on business development and commercialisation opportunities.”

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.

## 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 2023

| Consolidated statement of cash flows                      | Current quarter<br>\$A'000 | Year to date<br>\$A'000 |
|---|----------------------------|-------------------------|
| <b>1. Cash flows from operating activities</b>            |                            |                         |
| 1.1 Receipts from customers                               | 149                        | 149                     |
| 1.2 Payments for  |                            |                         |
| (a) research and development                              | (331)                      | (2,154)                 |
| (b) commercialisation expenses                            | (68)                       | (348)                   |
| (c) management administration expenses                    | (54)                       | (221)                   |
| (d) directors' expenses                                   | (58)                       | (271)                   |
| (e) professional services                                 | (40)                       | (192)                   |
| (f) intellectual property                                 | (50)                       | (283)                   |
| (g) administration and corporate costs (see note 6)       | (81)                       | (488)                   |
| 1.3 Dividends received (see note 3)                       | -                          | -                       |
| 1.4 Interest received                                     | 19                         | 85                      |
| 1.5 Interest and other costs of finance paid              | -                          | -                       |
| 1.6 Income taxes paid                                     | -                          | -                       |
| 1.7 Government grants and tax incentives                  | -                          | 446                     |
| 1.8 Other (provide details if material)                   | -                          | -                       |
| <b>1.9 Net cash from / (used in) operating activities</b> | <b>(513)</b>               | <b>(3,276)</b>          |

Bio-Gene Technology Limited

ABN: 32 071 735 950

Level 6, 400 Collins Street, Melbourne, VIC 3000

|            |   |          |          |
|------------|---|----------|----------|
| <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   | (75) | (75) |
| 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>(75)</b> | <b>-</b> |

|            |  |              |              |
|------------|--|--------------|--------------|
| <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                             | 3,579        | 6,342        |
| 4.2        | Net cash from / (used in) operating activities (item 1.9 above)              | (513)        | (3,276)      |
| 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)             | (75)         | (75)         |
| 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>2,991</b> | <b>2,991</b> |

|            |   |                                    |                                     |
|------------|---|------------------------------------|-------------------------------------|
| <b>5.</b>  | <b>Reconciliation of cash and cash equivalents</b><br>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<br/>\$A'000</b> | <b>Previous quarter<br/>\$A'000</b> |
| 5.1        | Bank balances   | 45                                 | 18                                  |
| 5.2        | Call deposits   | 2,946                              | 3,561                               |
| 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>2,991</b>                       | <b>3,549</b>                        |

| <b>6. Payments to related parties of the entity and their associates</b>  | <b>Current quarter<br/>\$A'000</b> |
|---|------------------------------------|
| 6.1 Aggregate amount of payments to related parties and their associates included in item 1   | 186                                |
| 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> |                                    |

| <b>7. Financing facilities</b><br><i>Note: the term "facility" includes all forms of financing arrangements available to the entity.<br/>Add notes as necessary for an understanding of the sources of finance available to the entity.</i>   | <b>Total facility<br/>amount at quarter<br/>end<br/>\$A'000</b> | <b>Amount drawn at<br/>quarter end<br/>\$A'000</b> |
|---|---|--|
| 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)  | (513)          |
| 8.2 Cash and cash equivalents at quarter end (item 4.6)  | 2,991          |
| 8.3 Unused finance facilities available at quarter end (item 7.5)  | -              |
| 8.4 Total available funding (item 8.2 + item 8.3)  | <b>2,991</b>   |
| 8.5 <b>Estimated quarters of funding available (item 8.4 divided by item 8.1)</b>  | <b>5.8</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:

*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.*

### 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: 28 July 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.