

SHAREHOLDER UPDATE July 2008

Imugene Limited (ASX Code: IMU) specialises in the development and commercialisation of novel animal health products for pigs and poultry. Founded in 2002, Imugene has a stable specialist management and scientific team supplemented with extensive use of specialist consultants and trial facilities in the USA and Australia.

Our range of products under development includes vaccines to prevent important livestock diseases and productivity enhancers to improve the economics of raising commercial livestock. These biologically-based products improve the health and welfare of pigs and poultry and reduce or eliminate the use of antibiotics, chemicals and drugs.

April – June 2008 - Quarter Highlights:

Poultry Vaccines

- **Disease target - *Coccidiosis*:**

The Imugene constructed *Coccidiosis* vaccine was very successful in trials using broiler birds completed during the quarter. The independent trials confirmed the vaccine induced strong protection against the major poultry disease *Coccidiosis*. The vaccine is a combination of Imugene's platform Fowl Adenovirus Vector (FAV) vaccine delivery system and *Coccidiosis* genetic material from collaboration partner's, Abic Biological Laboratories Teva Ltd. A further trial is expected to be undertaken by Abic this quarter.

- **Disease target - *Avian Influenza (H5, H7 & H9 strains)*:**

The development of Imugene's suite of *Avian Influenza* vaccines continues. Outbreaks of H7 & H9 strain Avian Influenza continue to occur in various regions of the world.

Efficacy trials for the H7 & H9 vaccines have been designed and are planned to be commenced and completed this year. Laboratory construction and testing of all vaccine candidates is essentially complete.

USA Regulatory - Initial regulatory documents for the Imugene Avian Influenza (H5) vaccine have now been lodged at the US Department of Agriculture.

ABN 99 009 179 551

Registered Office
Level 20, Allendale Square, 77 St Georges Terrace, Perth WA 6000
Tel +61 8 94402660 Fax +61 8 9 4402699

www.imugene.com

- Disease target – *Chicken Anaemia Virus*

This vaccine was recently added to Imugene's portfolio. In a very short time, the vaccine has passed construction, laboratory testing and is now awaiting animal challenge trials. Planning for these trials is complete and all but one approval has been received. It is anticipated this trial, to be held in Australia, will commence in the current quarter

- Disease target – *Infectious Bursal Disease*

This disease has two forms, *Virulent* and *Classical*. Separate vaccine candidates have been constructed for each disease target. Once full laboratory testing is completed, the vaccines will proceed to efficacy trials. These trials have been planned and all approvals applied for. Again these trials, to be held in Australia, should commence in the current quarter.

Pig vaccines

- Disease target - *PRRS*:

Trials to evaluate Imugene's optimised *PRRS* vaccine recently commenced at a specialist pig trial facility in the USA. These trials are evaluating the previously selected vaccine which has undergone a series of modifications and improvements to increase its effectiveness and commercial value. Results are due towards the end of the current quarter.

FAV – Fowl Adenovirus Vector – Imugene's gene delivery system for poultry

PAV – Porcine Adenoviral Vector – Imugene's gene delivery system for pigs

Overview

The high efficacy results achieved with the Imugene/Abic *Coccidiosis* vaccine in the recent *Coccidiosis* trial are further validation of Imugene's platform poultry vaccine vector technology, the FAV.

Coccidiosis is a parasitic disease affecting poultry that causes massive economic and production losses throughout the poultry industry. The combination of Imugene's efficient FAV delivery system with *Abic Biological Laboratories Teva Ltd's* patented cocci genes, has the potential to provide a very commercial preventative vaccine for broilers. Additionally, the success of the trial has proven that the FAV is an effective vector for vaccines to prevent a parasitic disease as well as viral diseases.

The *coccidiosis* vaccine represents the second successful vaccine in our expanding poultry disease vaccine range. Following on from the trial successes of our *Avian Influenza* (H5N1) vaccine in mid 2007, the Imugene laboratory embarked on an aggressive expansion of the poultry range of products. The *coccidiosis* trial success is the first of this expansion. Other disease vaccines that are ready to proceed to the animal testing phase include the two other Avian Flu vaccines (H7 & H9 strains), a vaccine against *Chicken Anaemia Virus*, and vaccines against two forms of *Infectious Bursal* diseases. Plans are progressing to undertake trials of all these vaccines this year.

In addition, the *coccidiosis* vaccine will enter further trials, to be undertaken by Abic. The next trial is anticipated to begin next month. Imugene has prepared sufficient quantity of the vaccine for this trial and Abic will contribute to Imugene's past research expenditure.

On the porcine vaccine development program, Imugene is currently trialing the revised *PRRS* vaccine in the USA. This is an important trial to test the efficacy of the vaccine against one of the two major pig diseases confronting producers.

Development work in relation to another major pig disease is also progressing very well and planning is well advanced for an efficacy trial this year. For commercial competitive reasons the identity of the disease target and status of development will remain confidential until patent and other protection measures have been filed.

Our first regulatory application has been submitted in the US in relation to our FAV vaccine for *Avian Influenza* (H5N1). Together with our experienced US based regulatory advisors and consultants, Imugene is undertaking the methodical process of working through the regulatory procedures to determine the steps necessary to bring the FAV & PAV vaccines to the USA market. This process is aimed at enhancing the value of our vaccine delivery platforms to potential licensees for each of our vaccine products.

Our commercial strategy is to develop and add value to our products as we progress them towards commercialization and sales. At an appropriate point in the development pathway, our model is to license our products to the major animal health companies to use their global regulatory, manufacturing, marketing and distribution experience and resources to complete the path to market.

Our financial goal is to maximize income through license and royalty income, recouping research costs and contract laboratory work on our products for our commercial partners. Imugene has completed a very productive and successful quarter both in the laboratory and with trials being either completed, commenced or planned. The next two quarters also promise to be very busy as we look forward to the results of the *PRRS* trial and up to six poultry trials.

FAV-Cocci Trial Result Summary

During March and April, Abic undertook the first challenge trial of the Imugene/Abic vaccines designed to protect broilers against the *coccidiosis* disease. Of the six variations of the vaccine candidates tested, one vaccine in particular was highly successful in inducing strong protection against the *coccidiosis* disease and lesions. In addition, this vaccine significantly reduced shedding of the parasite which is another major indicator for vaccine efficacy.

Through the combination of Imugene's FAV delivery system with Abic's coccidian genetic material, the successful vaccine has now surpassed the accepted commercial parameters for protection against this disease. *Coccidiosis* affects all young chickens in both the chicken meat and egg production markets. The FAV delivery system enables this effective vaccine to be administered orally (in water) on a mass scale. Accordingly, this vaccine will be developed for introduction to the large international broiler markets.

The success of this trial has proven that the Imugene FAV delivery system can be effective against non-viral diseases. *Coccidiosis* is a protozoal parasite and the recent trial success has

proven the FAV vector protective against this class of infectious agent in addition to the efficacy as a vaccine against viral diseases such as Avian Influenza.

Abic has planned a further trial to test the best performing vaccines. This trial is due to commence in August in Australia with results anticipated in October.

The next stages in the development of the vaccine will require optimisation techniques to be applied and trialing to determine aspects such as minimum dose and optimum age of administration for protection. Abic and Imugene are in discussions regarding the arrangements to undertake these necessary stages of development. Imugene's commercial strategy remains consistent and will seek to license to Abic the FAV to enable the *coccidiosis* vaccine to be developed and marketed by Abic to broiler producers worldwide.

The recently held cocci trial was conducted by Abic in conjunction with the University of Technology Sydney in Australia. The trial was designed to test and compare the performance of several versions of vaccines using Imugene's patented FAV delivery system and Abic's patented coccidian genetic material. The blinded trial consisted of 24 groups with 20 broiler birds in each group.

The vaccine candidate groups that produced the successful protection were orally vaccinated at 1 and 14 days old. On day 28, all birds were challenged with the *Eimeria maxima* species of coccidia. (*E. maxima* is one of the most common and problematic species of coccidia).

The trial measured protective efficacy in two ways:

1. Lesion Scoring – Birds in the Lesion scoring groups were euthanased 7 days following challenge and were scored as to the severity of *coccidiosis* effect (lesions) in the gut. Scoring was from "0" (no lesions) to "+4" (severe lesions).
2. Oocyst shedding- The oocyst is the coccidian cyst that is transferred from an infected bird via the faeces and is the infective stage for other broilers. Birds in the oocyst scoring groups had fecal material collected for each of the four days following challenge and oocysts were counted. A reduction of the peak litter oocysts of between 60-80% is considered commercial efficacy.

The protective vaccine group's results are:

1. Lesions : (the lower the score the better)
74% of birds had a score of 1 lesion (control group 6%)
11% of birds had a score of 3 lesions or more (control group 44%)
2. Oocysts: (the lower the count the better)
Group max daily oocyst count <68,000 (control group>350,000) **vaccine reduction 80%**
Group total oocyst count <139,000 (control group>668,000) **vaccine reduction 79%**

About Coccidiosis

Disease

Coccidiosis is one of the most common and costly diseases in poultry and is prevalent worldwide. The parasitic disease causes weight loss and poor feed conversion and the death

rate in chicks and adult birds can be high. *Coccidiosis* preventatives and treatments are the second biggest poultry health product category, second to in-feed antibiotics.

Current treatment for poultry (Breeder & Layer) producers

Abic currently markets a very effective 'non-vectored' sub-unit coccidia vaccine which is sold to poultry broiler breeders, for the maternal immunization of their offspring chicks. Abic distribute this product "CoxAbic[®]" globally. The genetic material used in this effective 'injectable only' sub-unit vaccine for breeder birds has been used by Imugene in constructing the FAV cocci vaccines for oral delivery for the broiler bird markets.

Current treatment for poultry (broiler) producers

Current treatment for broilers is control only, not prevention, through the use of coccidiostats or low doses of coccidia as a type of vaccine. Coccidiostats are usually administered in the feed as additives and as they are chemicals they are suffering from declining effectiveness as resistance is developing.

The global market for broilers is in excess of 50 billion birds per year and current sales of coccidiostats and other preventatives exceeds US\$600 million per year

Commercial proposition

Coccidiostats are becoming less effective and cannot be used to prevent the disease. Preventative vaccines exist and are based on live attenuated vaccines and sub-unit vaccines. These sub-unit vaccines are injectable vaccines and the current vaccines are essentially low doses of weakened disease causing coccidian that do not prevent infection completely.

An effective vectored vaccine, deliverable orally by water, would be commercially attractive for its significant improvement in administration efficiency.

About Abic Biological Laboratories Teva Ltd

Abic is one of the industry leaders in preventive poultry vaccine development. Abic is a quality producer of pharmaceuticals and veterinary products. Abic Biological Laboratories is wholly owned by Teva Pharmaceutical Industries Ltd. The veterinary division under the name of Abic has emerged as a major force in the Israeli veterinary market.

Porcine Reproductive and Respiratory Syndrome (PRRS)

In early July, trials to evaluate Imugene's revised and optimised *PRRS* vaccine commenced at a specialist pig trial facility in the US. This trial is evaluating the previously selected Imugene *PRRS* vaccine which has undergone modifications and improvements to increase its effectiveness and commercial value.

The initial vaccination and 14 day booster dose have been administered. The pigs will then be challenged with the *PRRS* virus to assess the efficacy of the vaccine.

The live animal phase trial will take 6 weeks followed by a 4 - 6 week period of laboratory analysis with preliminary results anticipated thereafter in October.

The vaccine is based on Imugene's PAV delivery system that delivers selected genetic material to the pig to stimulate the immune system to protect against the *PRRS* virus.

The PRRS Disease

PRRS is a highly damaging respiratory and reproductive disease in pigs for which there are no effective treatments. The *PRRS* disease is an increasing economic problem for the major pig producers worldwide.

PRRS is recognised as the biggest problem disease in the worldwide swine industry. For over 20 years there has been little success in economical and effective control of this highly variable viral disease.

Imugene's PRRS PAV vector based vaccine

Three versions of the Imugene vaccine constructs were successfully challenge trialled last year and since that time development has concentrated on upgrading the best performing vaccine. Modifications were made to the vaccine based on new external scientific information which indicated that by altering part of the existing vaccine and adding an additional component the result may be a significant improvement in vaccine efficacy. These changes involved genetic engineering and are ideally suited to the vector based system of vaccine production.

Commercial proposition

PRRS is one of the most economically damaging diseases of pigs worldwide causing estimated annual industry losses over US\$1 billion. In the US alone *PRRS* is estimated to cost US\$550-750 million annually to pork producers. There is no effective treatment for the viral infection. Vaccines have been developed but are either ineffective or suffer safety issues. Farm management procedures have been implemented but the disease persists. Australia is one of three countries considered *PRRS* free.

Avian Influenza (H5, H7 & H9 strains)

Following the successful trials of Imugene's H5N1 *Avian Influenza* vaccine in 2007 the Imugene laboratory began developing a suite of vaccines designed to protect broilers from the two other prevalent forms of Avian Influenza caused by H7 & H9 strains. The decision to expand the vaccine range to cover other influenza virus strains was made to maximise the licensing value for a suite of avian influenza vaccines.

Whilst the H7 & H9 strains tend to cause less serious disease in birds than the H5 strain, outbreaks of both continue to occur globally and have been commercially damaging to poultry producers including in the US.

Laboratory construction and testing of these Avian Influenza vaccines is progressing on schedule with the expectation that all laboratory construction and testing will be completed this quarter. Efficacy trials for the H7 & H9 vaccines have been planned and subject to receipt of relevant trial approvals (animal ethics etc.) are anticipated to be commenced and completed this year.

Imugene's expectations are for these new vaccines to achieve similar levels of protection that the H5 vaccine delivers. The H5 vaccine is 100% effective for broilers when challenged against the highly pathogenic H5N1 virus with a two-dose regime. To date, protection has been achieved as early as 14-21 days of age.

Next phase in product range development

Once all vaccines (H7 & H9) have been trialed, Imugene will offer the suite of vaccines for license for a global rollout.

Development of a matching diagnostic tool is also underway. The Imugene diagnostic test will enable vaccinated chickens to be differentiated from naturally infected chickens – a key feature if governments mandate flock vaccination. Most existing vaccines do not allow blood tests to distinguish vaccinated birds and infected birds. In a disease outbreak or during surveillance this creates confusion about which birds to cull or when the infection is gone.

Infectious Bursal Disease Virus

Imugene has constructed vaccines for both the *Classical* and the *Very Virulent* strains of IBDV.

The *Very Virulent* strain vaccine has successfully completed all laboratory development and testing. Laboratory testing of the *Classical* strain vaccine is nearing completion.

Efficacy trials of both vaccine constructs have been planned, facilities identified and approvals sought from all necessary authorities. Imugene's expectation is that these trials should commence within three months.

Background

Infectious Bursal disease virus (IBDV) is an immunosuppressive virus which causes an acute disease in young chickens. The disease causing strains of *IBDV* targets the bursa of Fabricius (BF), which produces the cells (B-cells) that produce the chicken's protective antibodies. There exist the '*Classical*' strains and the '*Very Virulent*' strains of *IBDV*, both of which cause significant economic losses to the poultry industry worldwide.

The serious economical impact of both types of infection with *IBDV* warrants the use of preventative vaccines. There exists a range of inactivated vaccines which are used successfully for Breeders and Layers but are costly and therefore commercially prohibitive for use in broilers.

The ideal vaccine for broilers would be an effective vaccine that is convenient and inexpensive to administer, completely safe and does not damage the developing immune cells (B-cells) in the bursa of Fabricius. The Imugene FAV technology has the potential to achieve these goals.

Chicken Anaemia Virus

The CAV vaccine has completed the laboratory phase of development and is awaiting efficacy trialing. It is anticipated this trial will commence in the current quarter.

Background

CAV is another immunosuppressive disease that affects broilers and occurs in virtually all commercial chicken operations. CAV is highly resistant to disinfectants and heat. The virus attacks the precursors of the immune cells that develop in the thymus (T-cells), thereby causing an anaemia and immunosuppression in infected chickens. This predisposes CAV affected chickens to other infections which, in turn, cause economic losses.

Numerous studies have shown that the damage to the immune system following infection with CAV is an important cofactor for a number of other serious avian diseases, and that it has a significant impact on broiler livability and productivity. Eradicating the virus from commercial flocks requires a safe and effective vaccine that can prevent both vertical (hen to chick) and horizontal (chick to chick) transmission of the disease.

FAV Regulatory

Imugene, together with its US based consultants, has submitted its initial documentation to begin the regulatory approval process in the US. The initial registration documents apply to the Imugene *Avian Influenza* (H5N1) vaccine and were lodged at the US Department of Agriculture (USDA). This process is aimed at enhancing the value of our gene delivery platform to potential licensees for each of the products that use the FAV platform.

We have received confirmation from the USDA that the preliminary regulatory submission has been allocated to a USDA appointed reviewer.

Poultry Productivity Enhancer (PPE)

The PPE progress continues to be dependent upon the regulatory pathway being followed in the US. This products development has frustrated management, however, with information being gathered to assist the regulatory applications, this major product will progress through the commercialization process alongside rather than leading our other main poultry products.

Financial

Net cash burn rate per month for the financial year ended 30 June 2008 equated to \$100,000 per month. It is anticipated that the net cash burn for the next 6 months will be similar.

The Company year end cash balance was on budget at \$1.6m.

- ENDS -

About Imugene (ASX: IMU)

Imugene specialises in commercialising animal health products for production animals including pigs and poultry.

Imugene owns the worldwide rights to the *Fowl Adenoviral Vector Delivery System* for poultry and the *Porcine Adenoviral Vector Delivery System* for pigs. Imugene has successfully licensed the first product based on the *Fowl Adenoviral Vector Delivery System* – the *Poultry Productivity Enhancer*.

Imugene's poultry and pig portfolio is targeting a worldwide US\$3 billion annual market with four lead vaccine products under development and a strong product pipeline. Consumer demands for disease free and residue free food will bolster Imugene's prospects.

Imugene has extensive and comprehensive worldwide patent rights covering a range of technologies utilized to create our innovative product range. All our products are developed and undergo rigorous laboratory testing in our own laboratories in Australia before proceeding to animal trials in specialist facilities in the United States and Australia.

Our commercial strategy is to develop and add value to our products as we progress them towards commercialization and sales. At an appropriate point in the development pathway, our model is to license our products to the major animal health companies to use their global regulatory, manufacturing, marketing and distribution experience and resources to complete the path to market.

Our financial goal is to maximize income through license and royalty income, recouping research costs and contract laboratory work on our products for our commercial partners.

Background to the FAV

Poultry reared using modern intensive farming practices have been carefully selected by geneticists for their unparalleled ability to convert feed into growth, thereby providing people throughout the world with a relatively inexpensive form of quality animal protein. In order to fulfill their full genetic potential, broilers must be protected against a variety of infectious diseases that threaten their well being. While some diseases cause overt sickness and/or death, others have a more insidious impact by attacking the immune system, thereby reducing the chicken's ability to resist other infections.

Imugene is using the patented Fowl Adenovirus Vector to develop a range of vaccines for broilers that can be used to prevent some of the most important poultry diseases. The vaccines can be administered in ovo (injected into the egg before hatching) to give the earliest possible protection, or administered in water to birds of any age.

For more information please visit the Imugene Website www.imugene.com

For more information:

Dr Warwick Lamb
Managing Director
+61 2 9870 7330

Mr Graham Dowland
Executive Chairman
+61 8 9440 2660

Appendix 4C

Quarterly report for entities admitted on the basis of commitments

Introduced 31/3/2000. Amended 30/9/2001

Name of entity

IMUGENE LIMITED

ABN

99 009 179 551

Quarter ended ("current quarter")

30 June 2008

Consolidated statement of cash flows

Cash flows related to operating activities	Current quarter \$A'000	Year to date (12 months) \$A'000
1.1 Receipts from customers	-	-
1.2 Payments for		
(a) staff costs	(108)	(458)
(b) advertising and marketing	-	-
(c) research and development	(165)	(896)
(d) leased assets	-	-
(e) other working capital	(86)	(758)
1.3 Dividends received	-	-
1.4 Interest and other items of a similar nature received	23	58
1.5 Interest and other costs of finance paid	-	-
1.6 Income taxes paid	-	-
1.7 Other:		
Government grants	-	239
Other	283	602
Net operating cash flows	(53)	(1,213)

+ See chapter 19 for defined terms.

Appendix 4C
Quarterly report for entities
admitted on the basis of commitments

	Curent quarter \$A'000	Year to date (12 months) \$A'000
1.8 Net operating cash flows (carried forward)	(53)	(1,213)
Cash flows related to investing activities		
1.9 Payment for acquisition of:		
(a) businesses (item 5)	-	-
(b) equity investments	-	-
(c) intellectual property	-	-
(d) physical non-current assets	-	(2)
(e) other non-current assets	-	-
1.10 Proceeds from disposal of:		
(a) businesses (item 5)	-	-
(b) equity investments	-	-
(c) intellectual property	-	-
(d) physical non-current assets	-	-
(e) other non-current assets	-	-
1.11 Loans to other entities	-	-
1.12 Loans repaid by other entities	-	-
1.13 Other (provide details if material)	-	-
Net investing cash flows	-	(2)
1.14 Total operating and investing cash flows	(53)	(1,215)
Cash flows related to financing activities		
1.15 Proceeds from issues of shares, options, etc. (Rights Issue applications received)	-	1,828
1.16 Proceeds from sale of forfeited shares	-	-
1.17 Proceeds from borrowings	-	-
1.18 Repayment of borrowings	-	-
1.19 Dividends paid	-	-
1.20 Other (provide details if material)	-	(92)
Net financing cash flows	-	1,736
Net increase (decrease) in cash held	(53)	521
1.21 Cash at beginning of quarter/year to date	1,673	1,099
1.22 Exchange rate adjustments to item 1.20	-	-
1.23 Cash at end of quarter	1,620	1,620

+ See chapter 19 for defined terms.

Payments to directors of the entity and associates of the directors

Payments to related entities of the entity and associates of the related entities

		Current quarter \$A'000
1.24	Aggregate amount of payments to the parties included in item 1.2	(117)
1.25	Aggregate amount of loans to the parties included in item 1.11	Nil

1.26 Explanation necessary for an understanding of the transactions

(i)	Executive salaries, consulting fees and superannuation entitlements;
(ii)	Non-executive directors fees; and
(iii)	Rent

Non-cash financing and investing activities

2.1 Details of financing and investing transactions which have had a material effect on consolidated assets and liabilities but did not involve cash flows

None

2.2 Details of outlays made by other entities to establish or increase their share in businesses in which the reporting entity has an interest

None

Financing facilities available

Add notes as necessary for an understanding of the position. (See AASB 1026 paragraph 12.2).

		Amount available \$A'000	Amount used \$A'000
3.1	Loan facilities	Nil	N/A
3.2	Credit standby arrangements	Nil	N/A

+ See chapter 19 for defined terms.

Appendix 4C
Quarterly report for entities
admitted on the basis of commitments

Reconciliation of cash

Reconciliation of cash at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts is as follows.	Current quarter \$A'000	Previous quarter \$A'000
4.1 Cash on hand and at bank	1,620	1,673
4.2 Deposits at call	-	-
4.3 Bank overdraft	-	-
4.4 Other	-	-
Total: cash at end of quarter (item 1.22)	1,620	1,673

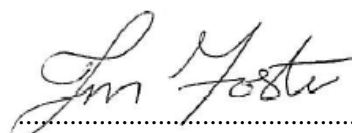
Acquisitions and disposals of business entities

	Acquisitions (Item 1.9(a))	Disposals (Item 1.10(a))
5.1 Name of entity	N/A	N/A
5.2 Place of incorporation or registration	N/A	N/A
5.3 Consideration for acquisition or disposal	N/A	N/A
5.4 Total net assets	N/A	N/A
5.5 Nature of business	N/A	N/A

Compliance statement

- 1 This statement has been prepared under accounting policies which comply with accounting standards as defined in the Corporations Act (except to the extent that information is not required because of note 2) or other standards acceptable to ASX.
- 2 This statement does ~~does not~~ give a true and fair view of the matters disclosed.

Sign here:



(~~Director~~/Company secretary)

Date: 31 July 2008

Print name: Julie Foster

+ See chapter 19 for defined terms.