



**HEXIMA**

Hexima Limited ABN 64 079 319 314

# 2007

ANNUAL REPORT



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## NOTICE OF MEETING

The Annual General Meeting of Hexima Limited will be held at The Oaks on Collins at 480 Collins Street, Melbourne on Friday 30 November 2007 at 3pm.



## CHAIRMAN'S LETTER

**SINCE THE END OF THE REPORTING PERIOD, HEXIMA HAS COMPLETED AN INITIAL PUBLIC OFFERING, RAISING \$40 MILLION. THE COMPANY LISTED ON THE ASX ON 27 AUGUST 2007.**

### **Dear Shareholder,**

I am very pleased to welcome so many new shareholders in Hexima, and to thank existing shareholders for your continued support. The past year was an important one for Hexima. As well as making progress in the development and commercialisation of its technologies, the Company prepared for an Initial Public Offering which was successfully completed on 27 August 2007. The fully subscribed Initial Public Offering raised \$40 million through the issue of 32 million shares.

This capital will be used to further the commercialisation of Hexima's three major technologies, and to expand its research and development activities.

Ag-biotechnology offers solutions to the challenges presented by increasing global demand for food and fibre with limited supplies of land and water.

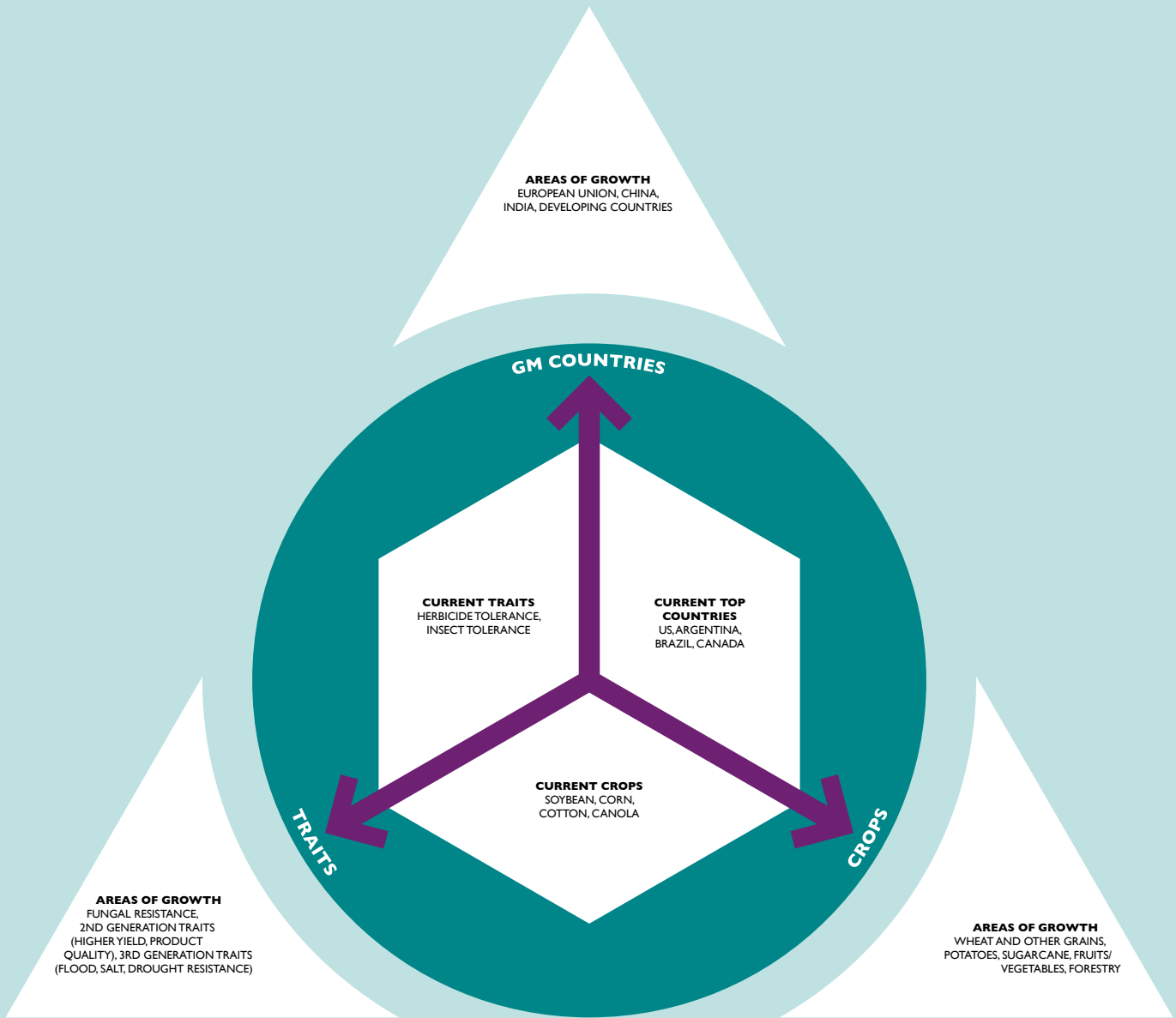
Hexima's technologies enable the genetic modification of crops primarily to enhance their resistance to insects and fungal pathogens. The Company seeks to increase shareholder value by commercialising these technologies through collaboration with major agribusiness partners. In this respect the Board has been encouraged by the confidence shown in Hexima by Dow AgroSciences who entered into a collaboration agreement for cotton seed development with Hexima in August 2007.

There were a number of changes to the Board structure during the year. The Board was pleased that Mr Hugh Morgan became a Director of the Company on 10 May 2007. Two of Hexima's founders, Professor Marilyn Anderson and Dr Robyn Heath, resigned as directors of the Company, to continue in their important roles as leaders of the research teams at La Trobe University and The University of Melbourne. On behalf of all shareholders, I thank Professor Anderson and Dr Heath for their significant contribution as Directors of the Company over many years and look forward to their continued integral association with the Company.

I would like to thank all Directors, employees, and the members of the research teams for their efforts during the year. We look forward to an exciting year ahead.

Yours sincerely

**Steven M Skala**  
Chairman



THERE ARE SIGNIFICANT DRIVERS OF GROWTH ACROSS THE WHOLE INDUSTRY IN THE FORM OF NEW COUNTRIES, CROPS AND TRAITS

# MANAGING DIRECTOR'S REPORT

THE PAST YEAR HAS BEEN AN EXCITING AND POSITIVE PERIOD FOR HEXIMA. THE HIGHLIGHT OF THE PERIOD WAS THE SUCCESSFUL COMPLETION OF OUR \$40 MILLION INITIAL PUBLIC OFFERING IN AUGUST 2007. THIS CAPITAL RAISING HAS GIVEN HEXIMA THE CAPITAL TO IMPLEMENT, OVER THE COMING YEARS, ITS STRATEGY TO SEEK TO COMMERCIALISE THE COMPANY'S INNOVATIVE TECHNOLOGIES.

The major achievements for the year were:

- Our Insect Resistance and Fungal Resistance technologies passed several important development milestones in the laboratory and in the glasshouse.
- Our Insect Resistance technology performed well in field trials for the third season.
- Our Fungal Resistance technologies achieved a very good result in field trials.
- The Company further developed our existing collaborative agreements and commenced several new collaborations with several key Agribusiness groups.
- Hexima entered into an R&D agreement with Balmoral Australia relating to the pharmaceutical applications of the Company's PI and defensin technologies in the treatment and prevention of cancer.

## Financial Results

During the 2007 financial year, Hexima increased investment in the development of its key technologies and began the process of developing the administrative capacity of a listed company.

The Company reported a loss before interest and tax of \$2.924 million compared to \$1.712 million in the previous year.

There has been a significant increase in the expenses incurred in funding R&D and field trials, as well as the expenses of establishing a listed company and raising capital, which have been only partially offset by an increase in income from collaborations and government grants.

## Technology

The Company's three most advanced technologies are:

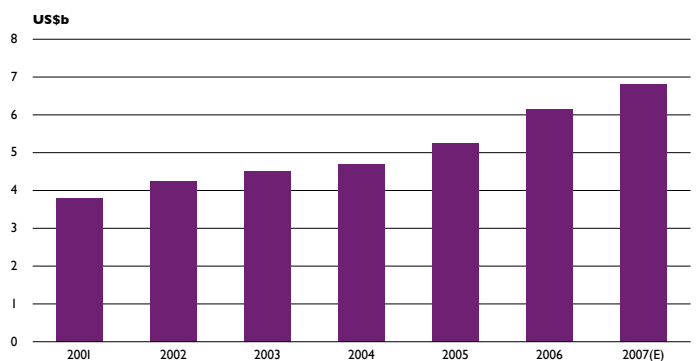
- Insect Resistance technology – this provides crops with greater levels of insect resistance by inhibiting the capacity of insects to digest proteins, thus adversely affecting their growth and development. Consequently, there is less damage to plants by the insects.
- Fungal Resistance technology – this provides crops with a greater level of resistance to several fungal pathogens.
- Gene Delivery technology – this is a molecular tool which facilitates the transfer of multiple genes into a plant in a single event. It is known as the Multi-Gene Expression Vehicle (MGEV).

More detail on our progress with each of these technologies is provided in the coming pages.

## Growth in Hexima's Target Market

The past year has seen a growing global demand for agricultural products which has resulted in an increase in the price of most key commodities.

In parallel with the general increase in demand for agricultural commodities, the global market for Ag Biotech seeds and traits again grew rapidly.



GLOBAL VALUE OF THE BIOTECH MARKET (SEED AND TRAIT FEES). SOURCE: ISAAA

Hexima is also encouraged by the growth prospects for this market. Growth is forecast to continue or accelerate as growth opportunities exist in three dimensions: new countries, new crops and new traits.

## Our Team

Our success in the past year would not have been possible without the hard work and commitment of the Hexima team. Hexima now has approximately 25 staff most of whom are based at The University of Melbourne and La Trobe University. We value these business partnerships and hope to build on our excellent relationships with The University of Melbourne and La Trobe University in the coming years. The Hexima team is proud of the success the Company has enjoyed in the past year. However, all of our team is focused on moving forward to further develop and commercialise our technologies so that our shareholders can be rewarded appropriately.

**G F Dan O'Brien**  
Managing Director

## RESEARCH AND DEVELOPMENT REPORT

HEXIMA IS ENGAGED IN THE RESEARCH AND DEVELOPMENT OF TECHNOLOGIES FOR THE PROTECTION AND ENHANCEMENT OF COMMERCIAL CROPS, PRIMARILY TO ENHANCE THEIR RESISTANCE TO INSECTS AND FUNGAL PESTS.

THE COMPANY'S MAJOR TECHNOLOGIES ARE INSECT RESISTANCE TECHNOLOGY (PI TECHNOLOGY OR PROTEINASE INHIBITORS), FUNGAL RESISTANCE TECHNOLOGY (DEFENSINS) AND GENE DELIVERY TECHNOLOGY, KNOWN AS THE MULTI-GENE EXPRESSION VEHICLE (MGEV). GOOD PROGRESS IN RELATION TO EACH OF THESE TECHNOLOGIES CONTINUES TO BE ACHIEVED.

CONTROL LEAF



PI LEAF



LARVAL GROWTH  
INHIBITED BY UP TO 80%



### INSECT RESISTANCE TECHNOLOGY (PI TECHNOLOGY OR PROTEINASE INHIBITORS)

Hexima's insect resistance technology provides crops with greater levels of insect resistance by inhibiting the capacity of insects to digest proteins, thus adversely affecting their growth and development and reducing their damage to plants.

Bt technology is the dominant form of insect resistance technology currently available to growers and has created significant value since its introduction a little over a decade ago. There is a real concern that resistance to Bt technology may emerge and Hexima's PI technology may play an important role in relation to this. While PI technology is able to be developed as a stand-alone technology, the most immediate application is likely to be as a complementary technology to one or more of the existing Bt insect resistance technologies. To this end, Hexima's first generation PI technology is currently being tested for its effectiveness in conjunction with various Bt technologies. Hexima's second generation insect resistance technology is also under development.

Three field trials of the PI technology in cotton have now been conducted in Queensland at different sites during the last three growing seasons. Insect pressure during the three growing seasons differed as did the scale of the trials. In each trial, the plants containing the PI technology out-performed the plants without the technology. In the most recent and largest field trial during the 2006-2007 season, plants containing the technology produced, without any insecticide spray treatment, a higher number of bolls per plant and matured earlier than plants not carrying the gene.

Importantly, there were no commercially significant morphological differences observed between PI and the parent untransformed cotton, except those differences related to the effect of insect pressure.

Furthermore, there was no evidence to indicate that Hexima's transformed PI cotton line is toxic to non-target insects and there were no phytotoxic effects due to insertion of the PI gene into the cotton plants.



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## FUNGAL RESISTANCE TECHNOLOGY (DEFENSINS)

Hexima's fungal resistance or defensin technology can be used to control certain fungal diseases in crops.

Defensin technology was tested in cotton during field trials in the 2006-2007 growing season in Queensland with very promising results. The cotton plants transformed with defensin, when grown in soil infected with the Fusarium wilt fungus, outperformed the untransformed line in survival, yield per plot, height and Fusarium disease ranking. In addition, there were no phytotoxic effects due to insertion of the defensin gene into cotton plants.

This trial data indicates that the NaD1 gene has the potential to be effective in providing field resistance against certain agronomically important soil-borne fungal diseases in a commercial crop situation. There was preliminary evidence that the NaD1 gene could also confer some protection against other soil borne fungal diseases. This protection will be further assessed in field trials planned for the 2007-2008 growing season in New South Wales and Queensland.

Further field trials for the effectiveness of the technology in reducing crop losses due to the fungi which cause Black root rot and Verticillium wilt are scheduled for planting in October 2007.

Research to test the effectiveness of the technology in crops other than cotton has commenced.

## MULTI-GENE EXPRESSION VEHICLE (MGEV)

Hexima's gene delivery technology or multi- gene expression vehicle (MGEV) is a molecular tool which facilitates the transfer of multiple genes into a plant in a single event. MGEV significantly decreases the time required to transfer multiple genes into a plant, avoiding the need for many years of breeding. Research directed at understanding the limitations of the MGEV for transferring multiple genes encoding proteins of different sizes is in progress. These proteins have been expressed from the one construct in plant tissues.

## PIPELINE PROJECTS

The Company continues to develop its pipeline of technologies, with a particular focus on new applications of existing technologies.

Work on the potential pharmaceutical applications of Hexima's PI and defensin technologies will commence in the 2007-2008 financial year. Work on cyclotides is also progressing.

Normally there is a delay between a discovery and the Company's commitment to disclosure. This is based on the process for examination and publication of patent applications. In general terms, there is a process after an initial discovery has been made which involves making a decision as to whether the discovery should be subject to a patent application. If the Company decides that it is in its interests to protect the discovery through the patent system, then a provisional patent application will be lodged. The process of writing this application would take between three and six months depending on the availability of robust data and the patent strategy. Once the patent application has been lodged, there is another period which can be more than 18 months before the content of the application is published by the Patent Office of a particular jurisdiction. In this framework, discoveries may remain as confidential material for about two years after the initial experimental work.

**Adrienne E Clarke**  
Chief Science Officer



## BOARD OF DIRECTORS



**Steven M Skala** BA, LL.B (HONS)  
(UNIVERSITY OF QLD), BCL (OXFORD UNIVERSITY)

### **Non-Executive Chairman**

Steven Skala is Vice Chairman, Australia and New Zealand of Deutsche Bank AG. He is a former commercial lawyer with more than 20 years experience in commercial law. Between 1982 and 1985, he was a partner of law firm Morris Fletcher and Cross (now Minter Ellison). Between 1985 and 2004 he was a partner of law firm, Arnold Bloch Leibler, and was Head of its Corporate and Commercial Practice for several years.

Mr Skala is the Chairman of Film Australia Limited and Media and Gaming Pty Limited, a Director of the Australian Broadcasting Corporation, Deutsche Australia Limited, Max Capital Group Ltd, Wilson HTM Investment Group Limited, The Australian Ballet and The Centre for Independent Studies. He is also the Vice President of The Walter and Eliza Hall Institute for Medical Research.

Mr Skala has been a Director of the Company since 17 May 2002 and is also a member of the Audit and Remuneration Committees.



**Professor Adrienne E Clarke AC** FAA,  
FTSE, BSc (HONS), PHD (THE UNIVERSITY OF MELBOURNE)

### **Deputy Chairman, Chief Science Officer**

Professor Adrienne Clarke is a founding member of Hexima, and became the Chief Science Officer in April 2006. Professor Clarke is Laureate Professor at The University of Melbourne. She was appointed to a Personal Chair at the School of Botany (awarded in 1982) and is past Director of the Plant Cell Biology Research Centre, The University of Melbourne (1982-1999), former Chairman of CSIRO (1991-96), former Lieutenant Governor of Victoria (1997-2000) and former Ambassador for Biotechnology for Victoria (2001-2003). She was made an Officer of the Order of Australia in 1991 and a Companion of the Order of Australia in 2004.

Professor Clarke was President of the International Society for Plant Molecular Biology (1997-98). She is a Foreign Member, American Academy of Arts and Science; Foreign Associate, National Academy of Sciences, USA; Companion, The Institute of Engineers, Australia; Fellow, Australian Academy of Science; and Fellow, Australian Academy of Technological Sciences and Engineering.

Professor Clarke is a Director of Fisher & Paykel Healthcare Ltd and was a Director of Woolworths Ltd until 30 September 2007.

Professor Clarke has been a Director of the Company since 15 November 2001 and is a member of the Remuneration Committee.



**G F Dan O'Brien** BSc, BVMS  
(MURDOCH UNIVERSITY), MBA (HARVARD UNIVERSITY)

**Managing Director**

Dan O'Brien became Managing Director and Chief Executive Officer of Hexima in October 2005. Mr O'Brien has extensive agribusiness experience including farming investments and executive and non-executive roles with Tasman Agriculture Limited, Colly Fams Cotton Limited, SPC Ardmona Limited and Select Harvests Limited. His previous roles include Chief Executive Officer positions with BIL Australia, Mattel Asia Pacific and The King Island Company Limited. Mr O'Brien holds an MBA, having graduated with distinction from Harvard Business School. He is also a qualified veterinary surgeon.

Mr O'Brien is a Director of Coates Hire Limited, Select Harvests Limited and Thomas and Coffey Limited.

Mr O'Brien has been secretary since 9 May 2002 and a Director of the Company since 17 May 2002.



**Hugh M Morgan AC** LLB, BCOMM  
(THE UNIVERSITY OF MELBOURNE)

**Non-Executive Director**

Hugh Morgan is Principal of First Chamock Pty Ltd and a member of the Lafarge International Advisory Board. He is also a Trustee of The Asia Society New York, President of the National Gallery of Victoria Foundation and Chairman of the Order of Australia Association Foundation.

Mr Morgan was a Director of the Board of the Reserve Bank of Australia until July 2007 and he was President of the Business Council of Australia from 2003 to 2005. He is also immediate Past President of the Australia Japan Business Co-operation Committee and immediate Past Co-Chair of the Commonwealth Business Council, and continuing Director.

Mr Morgan was Chief Executive Officer of WMC Limited from 1986 to 2003. He was a Director of Alcoa of Australia from 1977 to 1998 and a Director of Alcoa Inc from 1998 to 2001.

Mr Morgan has been a Director of the Company since 10 May 2007. He is Chairman of the Audit Committee and a member of the Remuneration Committee.



**Professor Jonathan West**  
BA (UNIVERSITY OF SYDNEY), PHD (HARVARD UNIVERSITY)

**Non-Executive Director**

Professor Jonathan West is the Director of the Australian Innovation Research Centre. Prior to assuming his current appointment, he taught for 18 years at the Harvard University Graduate School of Business Administration, where he was Associate Professor, founding Director of the Harvard University Life Sciences Initiative, and from 1998 to 1999 the Novartis Faculty Research Fellow. He has been Visiting Professor at Hitotsubashi University and the Nomura School of Advanced Management in Tokyo, Japan and Visiting Professor at the University de Paris IX-Dauphine, Sorbonne.

Professor West is also Chairman of the Asia Advisory Council of Bunge Ltd, one of the world's largest agribusiness processing and trading companies, and has served as an advisor to other major corporations and several Governments around the world, including in the life sciences field, DuPont, Roche, Novartis, Syngenta and the J.R. Simplot Company, along with the Governments of Singapore, Japan, Hong Kong and France. He was a member of the Scientific Advisory Board of the Novartis Agricultural Discovery Institute in La Jolla, California. In Australia, he has served on the Prime Minister's Science, Engineering, Innovation Council's Working Group on Science and Technology in China and India and in 2006 was 'Eminent Thinker in Residence' with the Premier of NSW.

Professor West has been a Director of the Company since 7 November 2005. He is Chairman of the Remuneration Committee and a member of the Audit Committee.

HEXIMA IS AN ASX LISTED AGRIBUSINESS COMPANY ACTIVELY ENGAGED IN THE RESEARCH AND DEVELOPMENT OF TECHNOLOGY FOR THE PROTECTION AND ENHANCEMENT OF COMMERCIAL CROPS, PRIMARILY TO ENHANCE THEIR RESISTANCE TO INSECTS AND FUNGAL PATHOGENS.

