



final report

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3D Printed Food conference – MLA introducing potential high valued red meat opportunities / trends

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Abstract

On May 2, 2017 the first Asia-Pacific 3D Food Printing Conference took place at Monash University, Food Innovation Centre in Melbourne, Australia.

Initiated and organised by Jakajima which started the first 3D Food Printing Conference in 2015 in Europe, Meat & Livestock Australia (MLA) was the major supporter / partner of the conference.

This provided an opportunity to present to the Australian red meat industry, and wider Food industry and research community, MLA's interest in leading edge science platforms such as three-dimensional (3D) food printing and associated disruptive business models for a "meat ink" as an example of MLA Donor Company's (MDC) High Value Foods Frontier strategy to grow high value demand beyond current commodity paradigm for benefit of the Australian red meat industry.

MLA had previously funded desktop research (V.RMH.0034 and V.RMH.0039) into 3D Printed meat opportunities – see: <https://www.mla.com.au/research-and-development/search-rd-reports/final-report-details/Develop-New-Products/Review-of-market-acceptance-and-value-proposition-for-3D-printed-meat/3305>

A number of speakers presented the science mechanisms behind the process and product design as well as global case studies. Discussion was also held regarding the impact of an ageing population and the current aged care sector, with 3D printing potentially providing an opportunity for the red meat industry to offer high protein and nutritious meals that can be presented in various shapes and sizes, and more appetising than the traditional pureed food.

The Conference attracted 77 attendees, with a majority coming from Australia (80%) and the rest from Asia, Europe, New Zealand and USA, equally divided.

Executive summary

The Australian red meat industry to remain globally competitive needs to continue to identify and evaluate innovation and new technology and business models to grow our markets and provide greater value for the industry. Recent advances in 3D Printing have seen the food and beverage industry begin to embrace this platform – with fast prototyping packaging and moulds for drinks and chocolates through to producing intricately shaped pasta shells. 3DP food is the technology where food is created (printed) layer by layer in a process called additive manufacturing. Various ingredients can be mixed, deposited and cooked, allowing quick experimentation with food combinations.

With red meat currently positioned in the minds of consumers as a good source of protein, iron and zinc, with both a taste and texture benefit over plant-based proteins MLA has identified 3D Printed red meat potential for new market opportunities to open up and further grow the demand for red meat to the benefit of the Australian red meat industry (aligned to MLA's strategic pillar 2 – Market Diversification and Growth, insights2innovation).

To bring to life this potential opportunity and to seek out interested partners to collaborate with, MLA supported the inaugural 3D Food Printing Asia Pacific Conference run by Jakajima.

Program

Refer to link to program and copies of the speakers presentations:

<https://3dfoodprintingconference.asia/program/>

The screenshot displays the website for the 3D Food Printing Conference Asia-Pacific Edition, held on 2 May 2017 at Monash University in Melbourne, Australia. The page features a navigation menu with options like Home, Conference, Registration, Venue, Partners, News, Contact, and European edition. A prominent 'Register now' button is visible. The main content area is titled 'Program' and lists various sessions with their respective times and speakers. Each session entry includes a small portrait of the speaker and a 'Download Presentation' link. The sessions are categorized into 'Registration and coffee', 'Break and Networking', and 'Drinks and Networking'. Social media sharing options are provided at the bottom of the page.

Time	Speaker	Topic
08:45 - 09:20		Registration and coffee
09:20 - 09:30	MODERATOR Sean Starting	General Manager – Research, Development & Innovation, Meat & Livestock Australia, Australia, More Information
09:30 - 09:45	Michael Lee	Manager High Value Foods Frontier, Meat & Livestock Australia, Australia, on "Tomorrow's Foods – MLA's insights2innovation program seeks to find out who will eat 3DP meat?", More Information Download Presentation
09:45 - 10:15	Bhesh Bhandari	Professor, University of Queensland, Australia, on "Designing a Healthy Food Ink: Importance of Food Materials Science and Engineering", More Information Download Presentation
10:15 - 10:45	Frits Hoff	CEO, byFlow B.V., The Netherlands, on "Hype vs. Reality in 3D-fooding", More Information Download Presentation related video
10:45 - 11:15		Break and Networking
11:15 - 11:45	Dr Teresa Wegryzn	Postdoctoral Fellow, Massey Institute of Food Science & Technology, Massey University, New Zealand, on "Design of Food-inks for low-pressure extrusion 3D printing", More Information Download Presentation
11:45 - 12:15	Claire Smith	Managing Director, Forbes Melaner, Australia, on "IMAGINE", More Information Download Presentation
12:15 - 12:45	Dr. Aarti Tobin	Team Leader, Meat Science Team, Commonwealth Scientific Industrial Research Organisation (CSIRO), Australia, on "Role of 3D printed foods for dysphagia sufferers", More Information Download Presentation
12:45 - 13:45		Lunch and 3D Meat Printing Demo by MLA's chef Sam Burke and Elylow
13:45 - 14:10	Charles Hamilton	University of Wollongong, Australia, on "3D Printing Vegemite & Marmite: Redefining Breakfast", More Information Download Presentation related video
14:10 - 14:35	Dr Deb Polson	Senior lecturer and Director of HUB Studio, Design Lab, Queensland University of Technology, Australia, on "Designing Playful Interfaces in support of 3D Food Printing", More Information
14:35 - 15:00	Rohit Ashok Khot	RMIT Vice Chancellor's postdoctoral fellow, Exertion Games Lab, RMIT University, Australia, on "Can Exercise and Chocolate go hand in hand?", More Information Download Presentation Related video
15:00 - 15:30		Break and Networking
15:30 - 16:00	Benjamin Felmer	Co-Founder, Legal, business development, & strategy, BeeHex, USA, More Information Download Presentation
16:00 - 16:30	Valérie Vancauwenberghie	PhD, University of Leuven, MeBioS division, Belgium, on "Pectin gel: a promising edible ink for the 3D printing of food with desired properties", More Information Download Presentation
16:30 - 17:00	Gerd Funk	CEO, PrintiZaasle, Germany, on "3D Food Printing – fascinating new business opportunities for food professionals", More Information Download Presentation
17:00 - 18:00		Drinks and Networking

Get social! Be informed about the conference and receive the latest 3D Food Printing. Follow @3dfoodprints and join the LinkedIn Group. Find more about the European editions.

Share via [f](#) [t](#) [g+](#) [p](#) [in](#) [d](#) [e](#)

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1. Press Coverage

The Australian press covered the conference and particularly the demo on 3D Meat printing given by MLA's chef Sam Burke and 3D Byflow team. A series of follow up TV and radio interviews were completed primarily by MLA's Michael Lee on the following day regarding the conference and MLA's interests and next steps.

Below is a snapshot :



Source: Channel nine news, Melbourne 6pm bulletin 2nd May, 2017

3D-printed meat makes the cut

MEAT is being printed in a laboratory in Australia, and the technology could revolutionise the way we eat. The 3D-printed meat is made from a mixture of ground beef, chicken and pork, and is being used to create a range of products, including burgers and steaks. The technology is being developed by a team of scientists at the University of Queensland, and is being used to create a range of products, including burgers and steaks. The technology is being developed by a team of scientists at the University of Queensland, and is being used to create a range of products, including burgers and steaks.



By Flow 3D's Felix Hain, left, and Meat and Livestock Australia chef Sam Burke with printed meat at Monash University

Source: The Australian 3rd May, 2017 (News limited)

See links below to other comms:

- <http://www.abc.net.au/landline/content/2017/s4664816.htm>
- <https://tenplay.com.au/channel-ten/the-project/2017/5/3/3d-printed-meat>
- <https://www.facebook.com/9NewsMelbourne/videos/1835075333422786/>
- <http://online.isentialink.com/theaustralian.com.au/2017/05/02/d743a43b-1208-4cdb-bb4f-8f1a2348868d.html>
- <http://www.weeklytimesnow.com.au/agribusiness/cattle/3dprinted-meat-makes-the-cut/news-story/c754523513b6b57a8813f5bd9cd41c61>
- www.abc.net.au/triplej/programs/hack/home-chocolate-machine-the-start-of-3d-printing-revolution/8487602
- <https://www.beefcentral.com/trade/red-meat-printing-initiative-prompts-3d-pop-up-restaurant-idea/>
- <http://blog.hightechcampus.com/build-your-business/byflow-steals-the-show-in-australia-with-3d-printed-meat>

2. Photo Gallery from the event

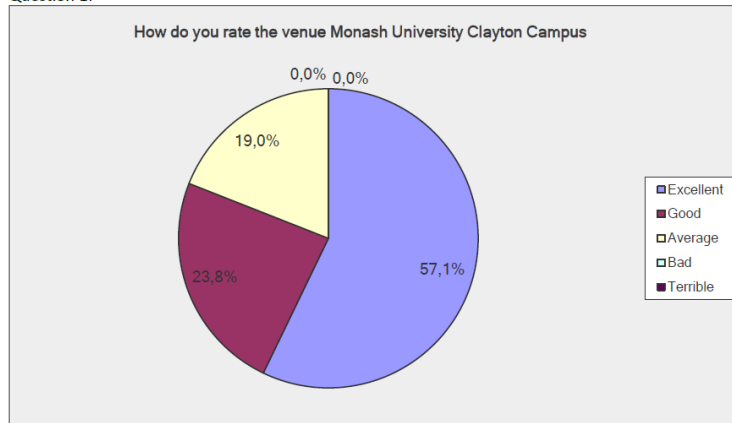


Source: Food Innovation Centre, Monash University

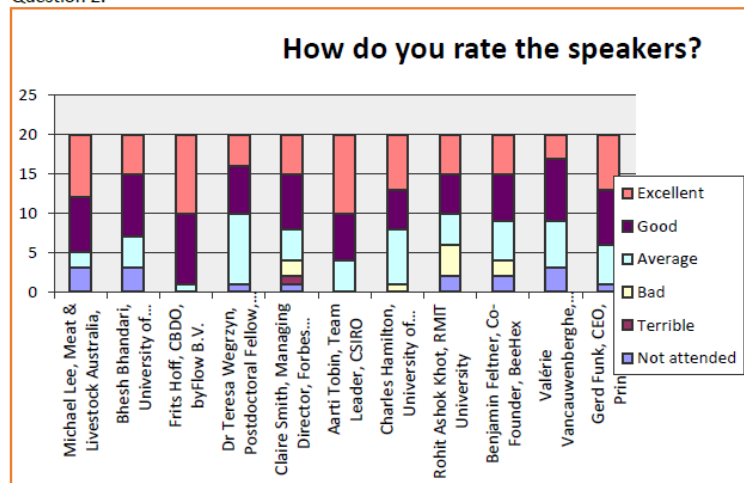
3. Event feedback:

After the conference all participants received a survey with questions related to the conference and related to several services MLA provides. In total, 25% of the attendees responded – results are displayed below:

Question 1:



Question 2:

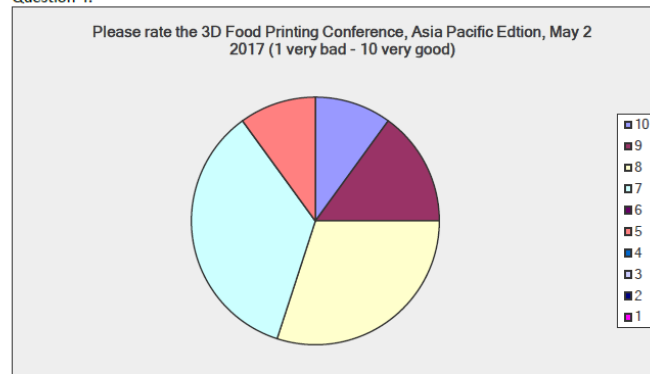


Question 3:



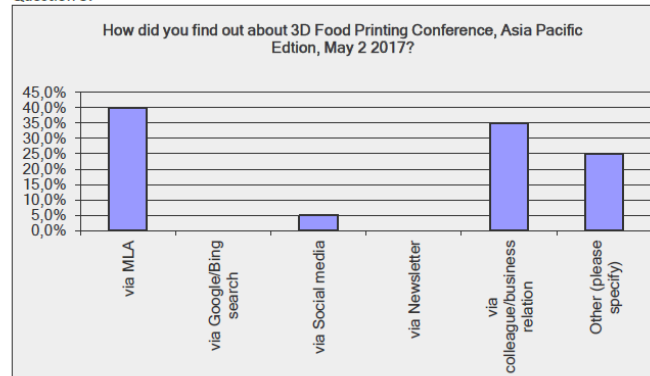
Report 3D FoodPrinting Conference results

Question 4:

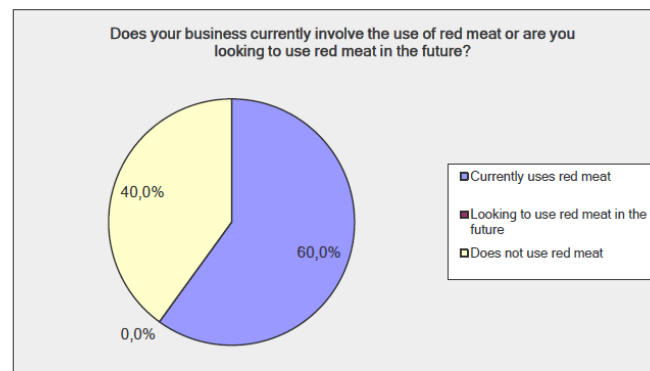


The average is rating is 7.7 (in a scale from 1 - 10)

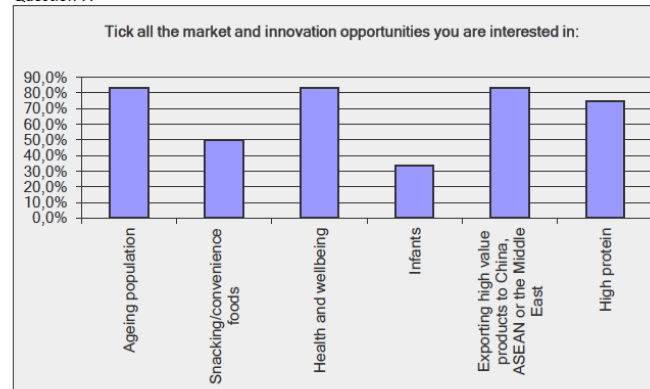
Question 5:



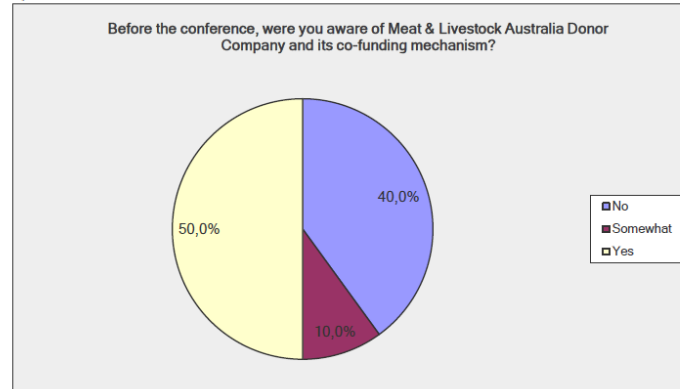
Question 6:



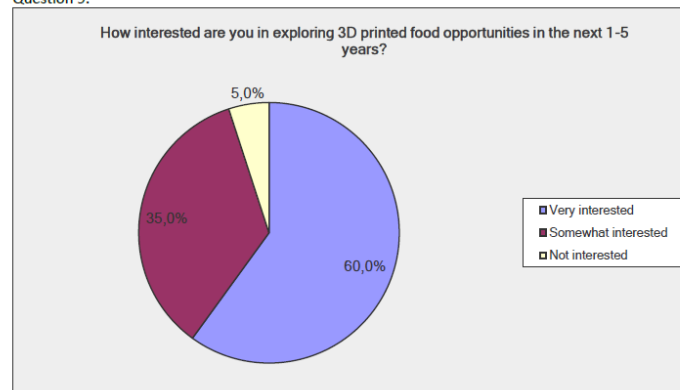
Question 7:



Question 8:



Question 9:



4. Next steps

Following the successful 3DPrinted Asia pacific conference, MLA has embarked on business development strategy to engage with industry to develop collaborative partnerships to continue the research. This has included discussions with chefs and distributors and retailers and manufacturers and construction and industrial building designers to plan adoption strategies.

Jakajima is continuing to source suitable events and speakers globally to present 3D Printed food seminars and networking opportunities.

A key message Michael Lee from MLA has been communicating is:

“The Australian red meat industry to remain globally competitive will need to embrace innovation and new technology to ensure we grow our markets and provide greater value for the industry. 3D Printed Foods is one of a number of leading edge science platforms being considered. As presented at the conference, MLA highlighted to the delegates that central to suitable next steps framework for research and partnerships with industry is to understand not simply can you 3D Print meat, but whether should you— namely, what would be the value for producers and consumers. At MLA, we don’t consider 3D Printed meat will ever replace the steaks and roasts that are enjoyed today. However, Meat & Livestock Australia continues to look at changing consumer lifestyles and behaviours - this has included investigating opportunities for red meat within the ageing population where some consumers who enjoy our products and their inherent high levels of protein, iron and zinc are unable to swallow or chew the product. By using 100% red meat as a “meat ink”, we are able to 3D print meat products with designed textures and intricate shapes that could be further personalised with the 3D Printer having an additional “ink” with added calcium or dietary fibre. MLA are also working with industry in investigating new business models for these new usages and occasions for red meat. As we’ve seen for the coffee pod and ink jet cartridges business, high value can be created for so called commodity products such as a cup of coffee and printing a page and evaluating these opportunities in context of red meat inks could represent new high value markets outside our popular steaks, roasts, and chops range.”