Final report

SparkLabs Cultiv8
Clean Agri-Food Tech Accelerator

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Abstract

The SparkLabs Cultiv8 Clean Agri-Food Tech Accelerator program was undertaken to support innovation in Australia's red meat and livestock industry, focusing on enhancing profitability, sustainability, and global competitiveness. The project aimed to identify and support practical, adoptable solutions with clear commercial outcomes.

The methodology involved a comprehensive selection process, including a 12-week search and discovery sprint evaluating over 600 companies, collaboration with MLA's innovation team, and a rigorous shortlisting process. The selected companies then participated in a six-month accelerator program which offered mentorship, funding, networking, and commercialisation support.

Key results included the selection and support of two companies: Bovotica, developing a methane-inhibiting feed supplement, and NanoSoils Bio, creating nanoparticle formulas for pasture resilience and potential methane reduction. Bovotica established a strategic partnership with Australian Country Choice. NanoSoils Bio engaged in collaborative efforts with industry partners, advanced its intellectual property portfolio, and partnered with MLA on a nanomaterials research project.

The project benefits the industry by accelerating the development of innovative solutions addressing critical challenges such as methane emissions and pasture resilience. It has strengthened connections between startups, industry bodies, and investors, potentially leading to significant improvements in sustainability and productivity in the red meat sector.

[MLA Editor added 12-May-2025 QUT press release - Bovotica secures $3.4m to reduce methane emissions from cows]

Executive summary

Background

SparkLabs Cultiv8, in partnership with Meat & Livestock Australia (MLA), has collaborated on an accelerator program aimed at driving innovation within the agricultural sector, particularly in the red meat industry. This collaboration seeks to nurture practical, adoptable solutions with clear commercial outcomes to enhance producer profitability, sustainability, and global competitiveness in Australia's red meat and livestock industry.

The accelerator program offers a differentiated approach to conventional research and development (R&D), spanning six months and providing participants with mentorship, funding opportunities, networking, business support, and expertise in commercialisation. Operating from the Global Ag-Tech Ecosystem (GATE) in Orange, NSW, the program is supported by the NSW Government, prominent research and development corporations, universities, and corporate entities.

Objectives

The primary objectives of this project were to:

- Identify and select two red meat-relevant technologies to participate in the annual accelerator program.
- Provide comprehensive support to the selected companies, including industry networking, investor relations, product refinement, and strategic partnerships.
- Drive innovation and unlock substantial potential throughout the agriculture and food supply chain.
- Enhance long-term profitability, sustainability, and international competitiveness within Australia's red meat and livestock industry.

Methodology

The methodology for the SparkLabs Cultiv8 x MLA accelerator program involved a 12-week global search and discovery sprint to evaluate over 600 companies using proprietary selection criteria, guided by MLA's strategic goals and innovation areas. This process included collaboration with MLA's innovation team to review and refine opportunities, followed by early due diligence and negotiations with shortlisted companies to ensure alignment with program objectives. The selected participants, Bovotica and NanoSoils Bio, were then supported through the accelerator program with mentorship, networking, product development assistance, and strategic partnership facilitation.

Key findings

- The accelerator program effectively identified innovative technologies addressing key challenges in the red meat industry, such as methane emissions and pasture resilience.
- Strategic partnerships and industry networking played a crucial role in advancing the selected companies' development and market potential.

- The program's support in areas such as investor relations and intellectual property management has been instrumental in positioning the companies for future growth.

Benefits to industry

- Potential for significant reduction in methane emissions from cattle through Bovotica's feed supplement technology.
- Enhanced pasture crop resilience and potential for reduced methane emissions through NanoSoils Bio's nanoparticle technology.
- Accelerated development and commercialisation of innovative solutions addressing key industry challenges.
- Strengthened connections between startups, industry bodies, and potential investors in the agtech sector.

Future research and recommendations

- Continue to support and monitor the progress of Bovotica and NanoSoils Bio, particularly in their efforts to scale their technologies and conduct real-world trials.
- Explore opportunities to expand the accelerator program to address additional challenges in the red meat industry, such as animal welfare and supply chain optimisation.
- Consider implementing a follow-up program to provide ongoing support to accelerator graduates as they move towards full commercialisation.
- Investigate potential synergies between the technologies developed by Bovotica and NanoSoils Bio, exploring integrated approaches to methane reduction and pasture management.

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1. Background

1.1Overview

1.1.1 SparkLabs Cultiv8

SparkLabs Cultiv8 is an early-stage accelerator fund manager, established in 2017. The manager's objective is to support innovative technology that translates market needs into actions. Developed in partnership with SparkLabs Global and collocated with the Department of Primary Industries at the Global AgTech Ecosystem (the GATE), the fund has supported 53 companies across 6 cohorts. The geographical split of participants is approximately 50/50 international to domestic, providing global access to opportunities to support Australian agriculture. The stage of companies spans from pre-seed to seed-stage companies with a focus on expanding their presence into both domestic and international markets.

Through the accelerator mentorship, networking, and bespoke guidance, SparkLabs Cultiv8 have supported the companies to collectively raise over A$750m from global venture, corporate, strategic, and private investors. The teams have also been successful recipients of global grant funding and competitions exceeding A$30m. The prolific growth has resulted in the creation of over 1000 global jobs and the portfolio companies growing to a combined total value of over A$1.75 billion.

The management team has demonstrated their capability to deliver an outstanding program and cultivate business growth, which is reflected in the positive performance of the cohorts, with over 82% of the accelerator companies still operating. The business support and mentoring provided by SparkLabs Cultiv8 has propelled start-ups into becoming venture-ready entities, driving significant investment returns, and delivering value to the agricultural industry.

1.1.2 MLA Engagement

To drive innovation within the agricultural sector, MLA has partnered with SparkLabs Cultiv8 to select two red meat relevant technologies to participate in the annual accelerator program. The accelerator program offers MLA a differentiated approach to conventional research and development (R&D). Spanning six months, this hybrid program provides participants with mentorship, funding opportunities, networking, business support, and expertise in commercialisation. The program operates from the Global Ag-Tech Ecosystem (GATE) in Orange, NSW, and is supported by the NSW Government, prominent research and development corporations, universities, and corporate entities.

This alternative exposure to innovation unlocks substantial potential throughout the agriculture and food supply chain. By nurturing practical, adoptable solutions with clear commercial outcomes, the accelerator program empowers MLA to drive long-term profitability, sustainability, and international competitiveness within Australia's red meat and livestock industry.

1.1.3 2024 Clean Agri-Food Tech Accelerator

The SparkLabs Cultiv8 2023-24 Clean Agri-Food Tech Accelerator was supported by the NSW Government under the Net Zero Plan Stage 1: 2020-2030. Through the program, SparkLabs Cultiv8 and MLA collaborated to address critical challenges in the Australian red meat and livestock industry, aiming to foster innovation to enhance productivity, sustainability, and global competitiveness. The program targeted specific industry problems such as methane emissions from livestock, animal health, and climate resilience of pastures. These challenges are significant due to their environmental impact, regulatory pressures, and the need for sustainable agricultural practices. The initial research revolved around identifying and accelerating the development of technologies that can mitigate these issues while improving profitability for producers. The main demographic included stakeholders in the red meat supply chain—producers, researchers, and industry bodies—who benefit from practical solutions that align with both economic and environmental goals.

The outcomes of this research are designed to drive actionable solutions with commercial viability. For instance, Bovotica's probiotic feed supplement aims to reduce methane emissions by 50-80% while increasing cattle weight gain, addressing both environmental and productivity concerns. Similarly, NanoSoils Bio leverages nanotechnology to enhance pasture resilience and reduce methane emissions through treated pastures. These innovations stand out due to their dual focus on environmental sustainability and economic benefits, as well as their scalability and advanced technological approaches.

Unlike conventional R&D programs, this accelerator uniquely combines mentorship, funding opportunities, and industry networking to fast-track solutions from concept to market. This collaborative model ensures that the selected technologies not only address pressing industry issues but also have a clear pathway for adoption and impact within the agricultural sector.

2. Objectives

MLA requires a balanced portfolio of strategic investments, and it is proposed that increased engagement with the global entrepreneurial community is required to attract higher growth disruptive innovation. Global partnerships with accelerators and incubators are a proven pathway of attracting high quality start-ups and identifying emerging innovations. The SparkLabs Cultiv8 accelerator program partnership had a focus on accelerating high impact innovations in the following areas: Natural Capital & Biodiversity, Circularity, Data & Connectivity, Automation & Robotics, Climate Adaptability & Emissions, Health & Wellness, Energy Transition & Adoption, Animal & Crop Productivity.

The program partnership was separated into two phases:

1. **Global market scan, filtering, and selection:** Designed to give the greatest visibility of emerging global trends in meat and livestock innovation and ensure alignment in identifying and selecting the best possible companies to invest in and support;
2. **Investment, program, and post program management:** Leveraging networks and capabilities to support companies to make significant progress and establish them in the Australian meat and livestock eco-system through the program and beyond.

The first phase aimed to ensure a comprehensive search to identify the most promising global companies that can also add significant value to Australian red meat sector reflecting MLA's innovation priorities.

This included the following steps:

- Initial meetings and discussion on specific areas of investment (innovation areas)
- Global search of potential early-stage companies / science to invest in
- Screening and early due diligence on high potential companies
- Selection of potential companies / science that we believe are worthy of investment
- Introduction and investment review with the MLA

The second phase ensured that the program added significant value to the investees in a way that maximised the positive impact on the Australian industry, including exposure to the MLA and its network to ensure accelerated adoption.

The objectives of the project were met successful.

3. Methodology

3.1 Search & Discovery

Following the initial stakeholder meeting between SparkLabs Cultiv8 and Meat and Livestock Australia to determine key innovation areas, SparkLabs Cultiv8 conducted an intensive 12-week search and discovery sprint. This process involved evaluating over 600 domestic and international companies using a multifaceted strategy that included data farming, network referrals, self-promotion, online applications, and outreach at global agtech conferences.

Our search parameters were guided by both the MLA's 2025 Strategic Plan and innovation areas identified in the steering group meeting. These areas included, but were not limited to:

- Increased productivity
- Emissions reduction
- Long duration multimodal pain relief
- Immunocontraception for male and female cattle
- Slow-release bolus technology that could be used for animal health products (vaccines/drenches etc) or methane mitigation supplements.

SparkLabs Cultiv8 conducted a comprehensive evaluation to identify companies that aligned with the research agreement's objectives and could benefit from our resources. Each company was assessed against our proprietary selection criteria, which included factors such as geographical location, founder experience, company maturity, technological innovation, scalability of the business model, and the total addressable market.

To enhance the selection process, SparkLabs Cultiv8 collaborated with MLA's innovation team, identifying 96 opportunities related to meat innovations. These opportunities were reviewed by the MLA and valuable feedback was provided. This collaborative effort played a crucial role in informing the shortlisting of potential candidates.

3.2 Screening, early due diligence & shortlist

Following the global search and discovery process to compile a long list of meat and livestock relevant technologies, SparkLabs Cultiv8 collaborated with the MLA team to refine this list and identify the most promising candidates.

The SparkLabs Cultiv8 team arranged meetings with these shortlisted companies to conduct early due diligence. This phase involved assessing each company's suitability for the program, evaluating their interest and availability, and negotiating the terms of their participation.

Our primary objective was to select the most promising applicants who could leverage the program's resources, expertise, and global network to accelerate their growth in the Agri-Food-Tech sector. The selection process was thorough, ensuring that chosen participants would receive optimal support to make a significant impact and drive innovation in the meat and livestock industry.

Throughout the selection and negotiation process the SparkLabs Cultiv8 team engaged with the MLA via a series of productive check-in meetings and phone calls. These interactions were crucial for providing updates on the selection process and discussing the interest levels of various companies in participating in the program. The collaborative effort ensured the alignment of goals and expectations, fostering a seamless selection process.

3.3 Negotiation of Program Participants

BOVOTICA

Founder: Andrew Leech

Technology: Methane Inhibitor

Selection Notes:

There are numerous emerging solutions aimed at addressing methane emissions from ruminant animals, including seaweed supplements, dietary modifications, and vaccinations. These solutions vary in terms of efficacy and scalability. Bovotica stands out with its proprietary technology: a probiotic/prebiotic feed supplement that reduces methane production in beef and dairy cows by 50-80% while also increasing weight gain by 5-10%.

Bovotica’s uniqueness lies in several key areas. It utilises advanced bioinformatics analysis, it has the capability for high throughput cultivation, ensuring consistent quality and supply at scale and it benefits from a simplified regulatory pathway, accelerating the product's path to market, reducing the time and costs associated with product approval.

The founding team brings over 15 years of academic research experience in bovine microbiome and methanogenesis. Additionally, the CEO has a proven track record in commercialisation, providing confidence in their ability to coordinate ongoing research and development of precision microbiome modulators and execute a robust go-to-market strategy.

With approximately 28 million head of cattle in Australia and around 1.5 billion globally, which contribute to 30% of global methane emissions, the market potential for Bovotica's product is substantial. This represents a significant addressable market with both productivity and environmental benefits. The combination of advanced technology, experienced leadership, and a clear path to market makes Bovotica a compelling investment opportunity with significant potential for industry impact and financial returns.

NANOSOILS BIO

Founder: Cong Vu

Technology: Nanoparticle formula

Selection Notes:

NanoSoils Bio's technology offers an innovative solution to help pasture crops adapt to climate challenges and potentially reduce methane emissions from livestock through the use of nanoparticle delivery technology. The nanoparticles are designed to enhance the resilience of pasture crops to climate and pest challenges. Additionally, these nanoparticles can be engineered to deliver active substances that reduce methane emissions from the fermentation process in ruminants when they consume the treated pastures.

NanoSoils Bio's strategy is distinct from other approved products. NanoSoils Bio's technology first delivers active substances to pastures to help crops adapt to climate stress, and subsequently to ruminants to reduce methane emissions via the treated pastures. This dual-benefit approach targets both pasture health and livestock emissions, offering a comprehensive solution.

The project is structured into two phases:

Phase 1 (July 2024 - June 2025):

- Design the nanoparticle formulation.
- Test the impact of nanoparticles on various pastures and soil types, as recommended by Meat & Livestock Australia (MLA).
- Evaluate the effect of nanoparticle-treated pastures on ruminal gaseous emissions in vitro using rumen fluid samples.

Phase 2 (2025 - 2027):

- Test the nanoparticle technology on a pasture field and with ruminants to assess real-world efficacy and scalability.

NanoSoils Bio's approach leverages cutting-edge nanotechnology to address both agricultural and environmental challenges. By enhancing pasture resilience and reducing livestock methane emissions, this project has the potential to make a significant impact on sustainable agriculture

and climate change mitigation. The phased approach ensures thorough testing and validation, supporting commercialisation efforts.

3.4 Delivery of Program

The SparkLabs Cultiv8 program is six months in length running from May – October, delivered in a hybrid format including in-person events and online sessions.

The program is structured into key concepts, however, with each company the specific details vary based on what stage they are at and where we can provide the most value.

The following areas area address via online bi-monthly one-on-one meetings and workshops:

- Understanding strengths & areas for growth
- Business Strategy & Structuring
- Product Development & Market Alignment
- Sales, Marketing & Strategic Market Entry
- Financial Planning & Management
- Growth, Competition & Fundraising
- Pitch Development

Key in person events throughout the program include:

- Week Zero
- Mid-Point
- Final Week

WEEK ZERO

Week Zero marked the launch of our 2024 Cleantech Agri-Food Accelerator Program. As part of the sponsorship program, we delivered several key events during this initial week. These activities set the stage for the accelerator's journey, introducing participants to program objectives and fostering connections within the cleantech and agri-food sectors.

The events included:

- Te Mania Angus Innovation Showcase
- A Day on the Farm
- Media Familiarisation
- Farm Tours

Te Mania Angus Innovation Showcase

This event served as part of Te Mania’s broader three-day event where they bring together their clients, commercial Angus cattle breeders who have access to Te Mania genetics through bull lease programs. The engagement with SparkLabs Cultiv8 offered attendees an opportunity to explore cutting-edge agtech developments relevant to the cattle industry and featured an educational pitch from Andrew Leech (Bovotica).

A Q&A session allowed participants to engage with presenters to discuss the specifics of the technology and the application in their operations. A networking break facilitated further connections and idea exchanges.

Andrew Leech, CEO of Bovotica pitching at the Te Mania Angus Showcase

A Day on the Farm

'A Day on the Farm' brought together key stakeholders from across the agricultural supply chain to foster knowledge sharing and open dialogue about farming practices and the evolving role of regulation in the industry's sustainability transformation.

The day featured diverse perspectives from producers, innovative founders, and corporate representatives, providing attendees with a comprehensive view of the challenges and opportunities in the agricultural sector.

Bovotica engaged in panels and workshops discussing the future of sustainable agriculture. The event aimed to influence informed decision-making across all levels of innovation and regulation to ensure future growth and stability in the industry.

Farm Tours

The farm tours were organised with the objective of providing program participants, who lacked firsthand experience with agricultural producers and farming operations, an opportunity to engage directly with farmers. This initiative was deemed crucial for understanding on-farm challenges and how new technologies could be designed to integrate into existing production systems. The dedicated day of farm tours connected participants with leading producers who had successfully incorporated cutting-edge technology into their operations.

The tours offered valuable insights into the factors that incentivised technology adoption and highlighted key considerations producers weighed before investing in new solutions. Participants visited diverse agricultural operations, including Ed Fagan's Mulyan Farm, a horticultural enterprise growing various vegetable crops for direct market sale and further processing. They also toured Bruce Watson's Kebby & Watson, a large-scale grain growing operation with extensive technology integration and research experience. Additionally, the group visited MSM Milling, a vertically integrated facility, which transforms non-GM canola seeds into oil and value-added stockfeed. These visits provided a comprehensive overview of technology application

across different agricultural sectors, fostering a deeper understanding of the practical challenges and benefits of innovation in farming.

MIDPOINT

The midpoint engagement offered a comprehensive agenda designed to propel participants towards success. The two-day session commenced with a celebration of achievements, followed by insightful panels on corporate farming and investment, interspersed with practical workshops on sales approaches, corporate negotiation, and storytelling for pitching. The event culminated with industry insights on supply chain decarbonisation and a session on CleanTech marketing, providing a well-rounded experience that combined knowledge-sharing, skill development, and networking opportunities.

SHOWCASE & FUTURE FOOD DINNER

The Showcase and Future Food Dinner celebrated innovation and collaboration in the agri-food sector. The objective was to connect stakeholders across the food supply chain, including founders, producers, investors, industry leaders, and government organisations. The showcase highlighted solutions and technologies developed by the 2024 cohort, allowing attendees to trace the journey of these innovations from conception to current development. This provided insights into future directions of agricultural and food technologies while fostering a collaborative network dedicated to enhancing food production, distribution, and consumption methods.

The Future Food Dinner spotlighted purpose-driven producers who integrate technology into their daily operations. These early adopters shared their experiences on how agri-food tech had impacted their businesses. The event offered a unique opportunity for like-minded individuals to network, collaborate, and explore potential partnerships across the agri-food supply chain. By celebrating the achievements of entrepreneurs and innovators while providing a platform for knowledge sharing, the event aimed to unite participants with a shared purpose of supporting a productive, resilient, and profitable food system.

Andrew Leech, CEO of Bovotica pitching at the SparkLabs Cultiv8 2024 Showcase.

4. Results

4.1 Bovotica

4.1.1 Identified Areas of Support

At the outset of the SparkLabs Cultiv8 accelerator program, Bovotica and SparkLabs Cultiv8 collaboratively identified several critical areas where support was required:

- Industry Networking: Expansion of connections within the agtech and beef sectors.
- Investor Relations: Facilitation of introductions to potential investors
- Product Refinement: Assistance in refining the product offering to better align with market demands and industry needs.
- Product Development Strategy: Support in reviewing and optimising the product development plan.
- Strategic Partnerships: Facilitation of introductions to key players in the cattle industry, including industry bodies and corporations, to secure access to rumen microbiome samples.
- Industry Expertise: Provision of insights into cattle industry practices, trends, and knowledge.
- Scientific Advisory Board: Assistance in recruiting board members with commercialisation experience in relevant scientific fields.
- Regulatory Landscape: Support in navigating and understanding the regulatory environment in the United States, as it pertains to Bovotica's product and industry.

4.1.2 Key Outcomes

Strategic Partnership

Bovotica has successfully established a strategic partnership with Australian Country Choice (ACC), Australia's largest family-owned, vertically integrated cattle and beef supply chain organisation. This collaboration provides Bovotica with unlimited access to rumen samples without animal ethics requirements, significantly facilitating advanced research and development. The partnership focuses on isolation techniques and bioreactor development, with ACC supporting research in these areas and potentially becoming a future funder.

Industry Networking

The accelerator program has fostered numerous valuable connections within the industry, enhancing collaboration and knowledge sharing. Bovotica has engaged with a diverse range of leaders and organisations that are influential in various sectors of meat and livestock production. Overall, the program has proven to be a significant catalyst for networking and growth opportunities.

Investor Relations

SparkLabs Cultiv8 has provided support in capital raising efforts. The accelerator has provided ongoing support through letters of recommendation, mentoring, and investor meetings.

Board Appointment

Jason Strong, former Managing Director of MLA has been appointed as the chair of Bovotica's board. Strong's extensive industry connections and sector expertise are expected to provide invaluable guidance and ongoing value to Bovotica's operations and strategic direction.

4.2 NanoSoils Bio

Nanosoils Bio continues to drive activity at the research level both in relation to new pathways for silica nanoparticles to reduce agrochemical rates in cropping systems and more recently supporting macro and micro algae production. During this period Nanosoils Bio has undertaken a range of activities that have been closely supported by SparkLabs Cultiv8.

4.2.1 Key Outcomes

- Collaboration with Industry Partner: Supported a South Australian partner in advancing the production of a key agricultural product in land-based systems. Efforts focused on improving early-stage growth, enhancing plant health, and mitigating bacterial challenges.
- Intellectual Property Development: Created and validated new intellectual property with legal experts, aimed at fostering improved growth and production outcomes.
- MLA Partnership: Collaborating with MLA on a research project where nanomaterials are leveraged to understand if modes of action can include a formulation that both/either supports pasture crops resilience and/or can support the release of active substances and distribute via grazing.

Strategic Developments

- Investment Preparation
    - Engaging support to drive additional investment activity
    - Planning a capital raise for 2025
    - Continuing financial support to refine product-market fit
- IP Clarification: Resolved outstanding intellectual property issues positioning NanoSoils Bio for market readiness.

5. Conclusion

The SparkLabs Cultiv8 accelerator program has been instrumental in driving the growth of both Bovotica and NanoSoils Bio by providing tailored support and strategic guidance. For Bovotica, the program facilitated advancements in fundraising, fostering investor relations, and connecting with key participants in the livestock industry, positioning the company for success.

Similarly, NanoSoils Bio has benefited from the program's support, enabling focused development and commercialisation skills. These efforts have propelled NanoSoils Bio to the forefront of nanotechnology applications in agriculture and aquaculture, with promising opportunities for innovation. These outcomes demonstrate SparkLabs Cultiv8's effectiveness in nurturing promising agtech ventures and driving innovation in the industry.