



Australian Alpaca
ASSOCIATION

Research and Industry Development Strategy

2022-2024

Australian Alpaca Association Ltd

PO Box 594 GUNGAHLIN ACT 2912 • +61 2 6151 2073 • info@alpaca.asn.au • www.alpaca.asn.au • ABN 30 067 146 481

A successful and sustainable alpaca industry in Australia.

Research and Industry Development Strategy

The Australian Alpaca Industry

While alpacas have a long history in the high Andean regions of South America, they have only been a part of Australian agriculture since 1989. Australian environmental conditions are different to the high altitude terrain of the Andes, but alpacas have proven to be successful as an introduced species, with a national herd size estimated at 350,000 in 2022.

The alpaca industry in Australia is primarily focused on fibre production for export and bloodstock sales (domestic and export). Australian alpaca is highly competitive in both fleece and bloodstock, due to exceptional quality and verifiable provenance of both bloodstock and fleece products. There is a smaller domestic fibre manufacturing industry and a domestic meat market, both of which have unrealised potential for growth.

Like all industries, Australian alpaca producers are being challenged by climate change, economic pressures, and changing patterns in global trade. Key areas of interest to the AAA are removing barriers to export trade, enabling best practice in biosecurity, improving farm productivity, and increasing diversity in markets.

Rigorous and relevant research is integral to the development of a long-term successful and sustainable alpaca industry in Australia.

Growing the Industry

This strategy has been developed under the **AAA Strategic Plan 2019-2024**

VISION: A successful and sustainable alpaca industry in Australia.

MISSION: To grow the alpaca industry into one that is recognised as a sustainable and profitable agricultural enterprise for current and future farmers through building domestic and international customer-driven markets & supply chains for Australian alpaca livestock, fibre, and meat.

Where **Strategic Priority 2.3** states:

Extend focus to include commercial and scientific R&D projects with a view to the continuity, viability, and sustainability of the alpaca industry.

Action: Solicit R&D project proposals covering commercial and scientific areas satisfying specified criteria.

Stakeholder Consultation

The development of the draft Research and Industry Development Strategy was informed by the following activities:

- Analysis of eAlpaca and industry data
- Feedback in AAA member surveys conducted in 2019, 2020, 2021,
- Member consultation undertaken for the development of the **AAA Sustainability Framework** and the **Rare and Natural Animal Fibres** project, and
- Data analysis and stakeholder consultation completed for the Agrifutures Australia Emerging Industries Program **Compact Business Case – Alpaca**

Key Insights from Past Consultations

1. The industry benefits most from strategies and research activities that offer opportunities production operations of all sizes to participate and learn
2. Growth of the industry is challenged by:
 - a. A lack of joined-up infrastructure in the supply chain reducing production efficiency
 - b. Limited domestic fleece processing and manufacturing capacity leading to over-reliance on export trade
 - c. Restricted access to export markets for bloodstock
 - d. High cost of agricultural production inputs
 - e. Inadequate alpaca-specific information in husbandry and veterinary practice that is appropriate and approved for Australian conditions
 - f. Slow alpaca reproduction rates
 - g. No artificial insemination capability and high expense of embryo transfer technology
3. Alpaca producers are keen to see:
 - a. Information specific to Australian agricultural/ environmental conditions to help them address challenges they are experiencing
 - b. Information on good animal health and welfare practice specific to alpacas, especially for new owners
 - c. Greater camelid-specific training for veterinarians
 - d. Information on cost-effective ways to improve farm productivity, fleece yield, and quality
 - e. Assistance with business planning and growth/sustainability strategies relevant to different size production operations

Funding Our Research

There is no specific R&D levy on alpaca producers, due to the income reduction currently affecting producers from export restrictions and in recognition of the increased costs of production resulting from drought, fires, floods, and the impact of COVID-19. All funds provided by AAA are sourced from general revenue (which includes membership fees, investment income, and product sales).

Except for scholarship awards, the AAA follows the principle of **partnership in research**. This requires all funding proposals to secure diverse sources of cash and in-kind support. For example, between 2006 and 2017 the AAA made a voluntary contribution of \$40,000 per annum to Agrifutures Australia (then RIRDC) for investment in RD&E (\$20,000 pa prior to that). These funds were matched with Australian Government funding, subject to approval of projects.

Research Success Stories

Supporting researchers brings direct and flow-on benefits to the whole of the alpaca industry. Partnership can be achieved through financial support or in-kind support. The AAA can assist with connecting researchers with alpaca producers, disseminating research knowledge, and developing industry applications.

The following projects provide examples of how applied and empirical researchers can work with alpaca producers to meet current industry needs and to identify areas for future research or industry development work.

Coat Colour Genetics

Following Dr Kylie Munyard's research into alpaca coat colour genetics at Curtin University, the AAA now provides members with access to an affordable, effective, genetic test which alpaca producers can use to inform their breeding strategies.

Nutrition and Gut Health

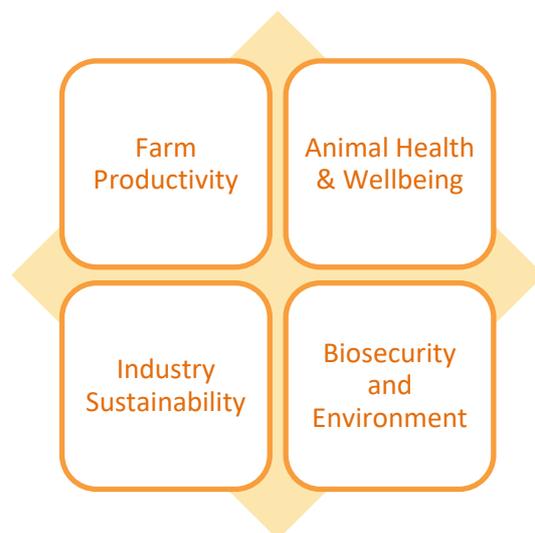
A current PhD research project by Imogen Boughey into alpaca nutrition and gut health is underway at the University of Sydney. The AAA is supporting this project through the award of \$5,000 in funds from the **Richard Dixon Memorial Scholarship** and by facilitating data collection from alpaca producers in the research activity.

Research completed in partnership with RIRDC includes:

- *Studies on gastrointestinal nematodes ("worms") of alpacas.* 2018. J. Vaughan, M. Rashid, and A. Jabbar
- *Castration methods and welfare of alpacas.* 2017. D. Blanche and S.K. Maloney
- *Quantitative genetic analysis of micron blowout in alpacas.* 2013. K. Munyard and J. Greeff.
- *Advancing artificial insemination in camelids, particularly alpacas.* 2012. C.M. Kershaw-Young and W.M.C. Maxwell
- *Inheritance of white colour in alpacas: Identifying the genes involved.* 2011. K. Munyard
- *Feeding alpacas to enhance reproduction and fleece quality.* 2011. D. Blanche, J. Vaughan, S.K. Maloney, and J.T.B. Milton
- *Improving the efficiency of reproduction and breeding in alpacas.* 2002. J. Vaughan

Priority Research Areas

Research relevant to the Australian Alpaca industry falls under four main areas:



Priority issues for the industry, identified through consultation with producers and industry stakeholders are:

Farm Productivity

The alpaca industry at all levels in Australia is dependent on successful breeding since few animals are imported. Failure of mated dams to deliver a live, healthy cria may be due to fertilisation failure, early embryonic loss, abortion, or delivery of a dead or non-viable cria. Young growing cria can be susceptible to a range of infectious and non-infectious/developmental conditions that may either prevent them from achieving their full potential. Accordingly, the need to improve breeding outcomes and cria health is a priority research goal.

Research proposals are invited on alpaca production practices for optimum herd growth without compromising animal wellbeing. This may include, but not be limited to, alpaca nutrition, selection of bloodstock for breeding, exploration of genetic factors contributing to vulnerability/hardiness of livestock, mating methods, improved pregnancy rates and retention, infection prevention and control, birthing intervention, pre-natal and post-natal care.

Improving the productivity of individual farms is also vital to industry sustainability. Research proposals are invited on projects to measure and improve understanding of factors contributing to higher productivity, including:

- Increasing the amount and quality of annual fleece yield
- Strategies to reduce the cost of inputs without reducing quality of output
- Developing a model for alpaca production business planning, including a self-assessment for skills development
- Investigate avenues for profitable diversification of product output, including a market analysis and examples on how to determine thresholds for profitable operation

Animal Health and Wellbeing

Animal welfare continues to be an important issue for the alpaca industry and consultation identified a range of welfare-related issues which merit further research including methods of handling, transporting, and training. These include:

- Development of a best practice for weanling health management, handling, and training
- Preventing and treating stress-related PEM in alpacas
- Parasite prevention and management of parasite-related conditions
- Preventing and treating chronic conditions e.g., gastric ulcers, lumpy jaw (osteomyelitis)
- Identifying potential toxic/mutagenic factors affecting alpaca breeding and health and/or birth defects (e.g., moulds, fungus, chemicals, infection, genetic factors)
- Identifying best practice in castration (age/development markers, techniques, anaesthesia, post-procedure wound care)
- Developing industry guidelines on best practice for animal welfare when shearing alpacas
- Developing industry guidelines on best practice for transport of alpacas
- Understand the impacts of severe weather events on the alpaca health and productivity, and identify protective/preventative strategies
- Development of a best practice for aged alpaca care

Industry Sustainability

Improving understanding of the factors contributing to industry growth, such as the size of the market opportunity, cost of production, and profit drivers will lead to a stronger industry. Analysis of accurate financial data and profitability forecasts, alongside economic factors, such as workforce projections and regional economic impacts, will inform investment decisions and help to attract new entrants to the alpaca industry. Research proposals are also invited to address known barriers inhibiting industry growth, including:

- Overcoming barriers to trade in premium markets (EU, UK, NZ)
- Opportunities to improve exports of Australian genetics Developing effective artificial insemination techniques for alpacas, including freezing of sperm and embryos
- Impacts of climate change on alpaca production
- Understanding factors affecting industry participation and entry to industry. Are alpaca producers different from other farmers?
- Develop a sophisticated model for national herd growth based on eAlpaca data for breeding
- Develop a model for production yield in different regions
- Map the demography of the industry (producers and contracting workforce)
- Project the future workforce demand and skills needed for industry growth
- Map existing domestic and global markets, and delineate areas of potential growth in customer demand
- Estimate the economic value of the industry in regional production and skills development
- Explore new product development opportunities for alpaca outputs (e.g., fibre, meat, hides, faeces, immunological/therapeutic uses)

Biosecurity and Environment

Biosecurity is an important issue affecting production and trade. Alpaca producers have differing levels of awareness of biosecurity threats and need comprehensive and cost-effective ways to prevent and address biosecurity matters.

- Develop a guide to effective practice in biosecurity for alpacas (what should breeders be addressing, when, and how)
- Understanding the role of insect vector patterns/migrating birds/native animals and potential for spreading disease in alpacas, and protocols for disease prevention

Environmental sustainability incorporates efforts directed at maintaining natural assets, efficient use of natural resources and minimising or mitigating any adverse effects of alpaca activities on the environment. Alpaca-specific research provides important inputs into future decisions that will help to ensure the industry continues to make a sustainable contribution to society and the environment.

Customers and consumers want to feel confident that the food and fibre they purchase has been responsibly produced. Research needs to provide a scientific basis for industry beliefs that alpaca production has a lesser impact on the environment than other livestock based agriculture. This knowledge will also support strategies to address climate change. Research proposals are invited on:

- Understanding the role of alpacas in pasture management
- Comparative research on environmental impact of alpaca farming compared to other livestock
- Comparative research on environmental impact of alpaca garment compared to synthetic garment
- Quantify benefits of using alpaca natural colours in processing compared to synthetic dyes
- Quantify environmental impacts of different methods for scouring of alpaca fleece

Supporting Research Activity

Alpaca Industry Research Network

The AAA Board established the Alpaca Industry Research Network (AIRN) in August 2022. This voluntary network will support research which contributes to a credible, authoritative evidence-base, informs good practice, and helps to develop a sustainable and resilient Australian alpaca industry.

AIRN will:

- Provide a forum to establish and grow relationships with researchers working in areas of interest to the Australian alpaca industry
- Help to disseminate information on current research to AAA members
- Be a resource to support and advise the AAA Board on research matters.

Eligibility for membership depends upon applicants meeting at least **one** of the following categories:

1. Current financial membership of the AAA and previous experience in scientific research or technological/industrial design
2. Current practice in applied research associated with an Australian tertiary education institution, Australian research organisation, or Australian consultancy practice
3. Current employment in an Australian organisation or government department in an area of work focused on industrial/technical/agricultural design or development.

Richard Dixon Memorial Scholarship

In recognition of services to the alpaca industry by the late Dr Richard Dixon, the AAA offers a scholarship to senior veterinary students. The award of \$5,000 is made annually. Further information on application may be found at <https://alpaca.asn.au/blog/news/richard-dixon-memorial-scholarship/>

AAA Industry Development Grant

The AAA Board provides funding opportunities to support Australian research of benefit to the alpaca industry. For more information on opportunities for eligible projects, please contact Annemarie Ashton-Wyatt, Director, annemarie@alpaca.asn.au