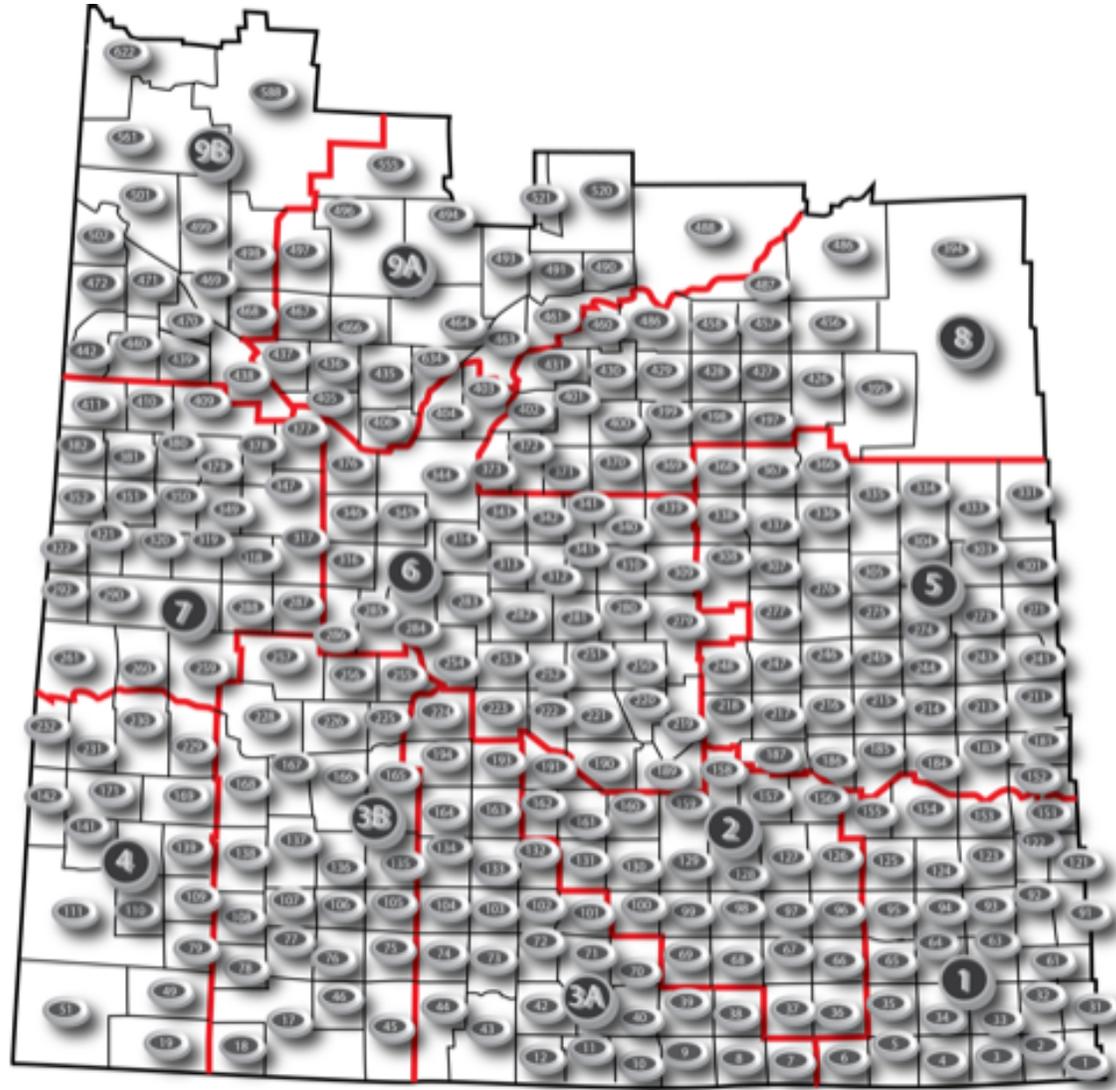




Research Priorities and Questions

FEBRUARY 25TH, 2021



Our Mission

Our mission is to develop and promote the success of **all production sectors** of Saskatchewan's beef cattle industry through effective representation from **all regions of the province**

There are more than 100,000 cattle farms or ranches over the province

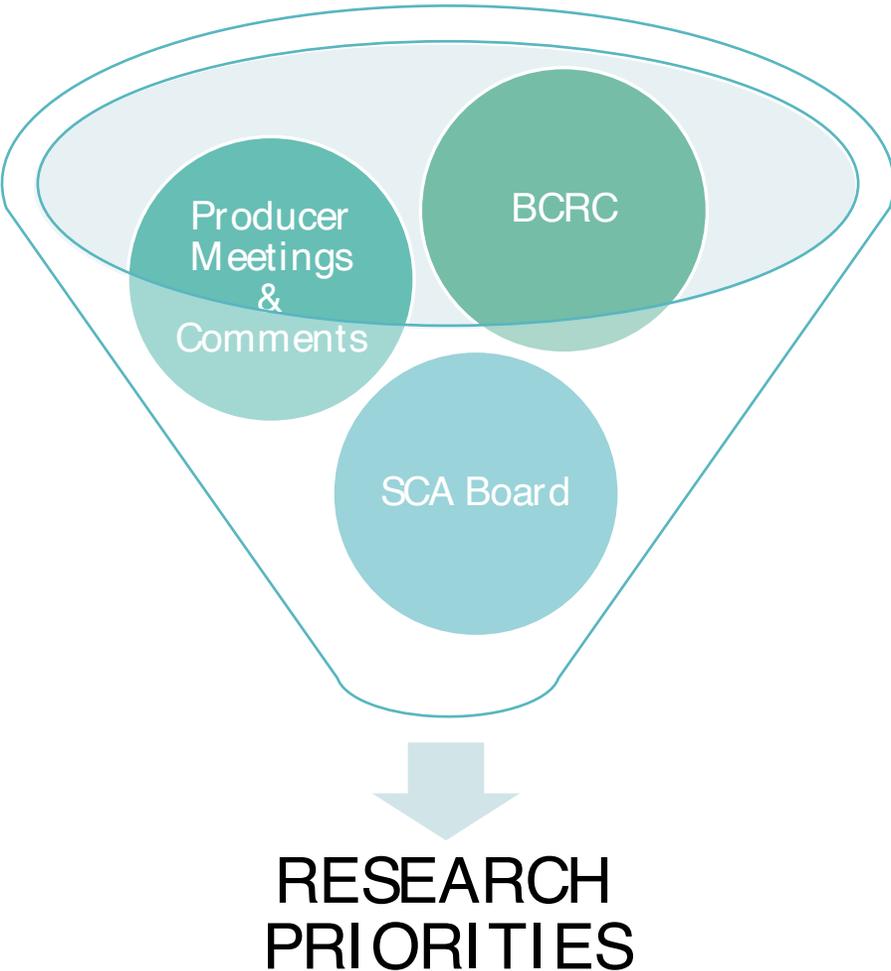
Our Research Budget is \$ 10,000,000/year

Who we work with... to name a few...



Saskatchewan Alfalfa Seed Producers Development Commission

Some notes on the priorities



- www.saskbeef.com/research
- ~~Conclusive List~~
- Communication Welcome
- Put yourself in the producers' shoes

Economic Sustainability

Understand proper incentivization of greenhouse gas mitigation strategies. What policies and strategies will create more sequestration and reduce emissions that benefit producers?

Note the implication of the carbon tax on farms and ranches. How does this affect consumers and their purchase power, leading to their nutrition? How does it affect producers who have diversified to produce ethanol and other products throughout the chain.

Note methods of market volatility protection, especially understanding mixed farms vs grain farms using government business risk management programs

Provide a numerical ranking of the financial costs per tonne of carbon equivalent mitigation techniques

Understand the costs and benefits of a more traceable system, also given that improved traceability might come with more benchmarking abilities.

Complete a gap analysis of, and note barriers to the implementation better vaccinating strategies and changing management practices to note preconditioning, reduced stress, etc.

Genomics

Provide knowledge needed to improve breeding strategies

Investigate and supply tools to enable breeders to move faster towards breeding goals

Improve upon markers available to note fleshing ability

Investigate and develop cross breed trait selection ability for milk production, which also takes into account fertility and calving ability

Investigate better tools, diagnostics, and programs for commercial cattle breeders.

Investigate the impact of animal genetics on disease susceptibility and resistance

Identify genes with functional roles in microbiological and physiological processes that affect feed intake and efficiency in feedlot and cow-calf production

Animal Health

Develop and promote cost-effective vaccination and management strategies that can be widely adopted throughout the beef production system to improve health, reproductive and performance outcomes

Re-invest in vaccine development, with a specific focus on pathogens such as *Mycoplasma* spp, liver abscesses, foot rot, and digital dermatitis

Investigate and develop simple, cost-effective alternative vaccine delivery methods to improve vaccination rates.

Develop rapid, accurate, cost-effective diagnostic tools to detect disease before symptoms become apparent.

Animal Health Continued

Evaluate the cost-effectiveness of pain control products and strategies for avoiding or mitigating acute and chronic pain.

Develop cost-effective non-antimicrobial products to prevent, treat and control disease.

Identify or develop management or treatment options that lead to improved control of internal and external parasites

Develop a durable, reliable cattle tracing system and vaccination system for in-field and rough conditions.

Create solutions to better manage unwanted bulls entering the feedlot, to alleviate aggression and riding from the animal.

Animal Nutrition and Management

Identify cost-effective agronomic strategies to increase feed grain energy yield per acre

Develop new feed grain varieties with improved feed grain energy yield per acre, nitrogen and water use efficiency

Identify, evaluate and calculate the cost-effectiveness of alternative / by-product energy feeds, considering impacts on animal performance, health, product quality, and nutrient management

Identify early signs of problems as a result of ergot and mycotoxins

Develop cost-effective mitigation and **neutralization** strategies for ergot and mycotoxins in pellets, hay, and grain for cow-calf and feedlot cattle.

Animal Nutrition and Management Continued

Improve upon rapid mycotoxin test results (non-DON)

Determine the appropriate levels of DON in feed before it affects the performance of cattle

Identify long-term efficient and cost-effective solutions to treat water not otherwise suitable for cattle to drink.

Conduct an evidence-based risk-assessment of the effectiveness of alternative production practices (e.g. preconditioning, methods of reducing stress in weaned calves)

Develop cost-effective nutritional and other management strategies to effectively reduce the need for antimicrobials to control liver abscesses

Develop a greater understanding of the respiratory and gut microbiomes, their establishment and development in the neonate, and their relation to immunity and disease

Environmental Stewardship

Investigate the role of forage management in maintaining a healthy environment, as it pertains to wildlife, soil health, economic viability, and animal condition.

Quantify nitrogen and phosphorus excretion rates in grazing animals & manure applications, and phosphorus runoff and leaching impacts on water quality / eutrophication

Quantify factors impacting the rate and extent of carbon sequestration in tame and native pastures within ecosystems and soils in Saskatchewan.

Quantify the impacts of native and tame pasture management on water use, cycles and watersheds across Western Canada

Forage and By-products

Expand communication and technology transfer programs which target producers

Develop new annual and perennial grass and legume varieties with improved stand longevity, quality, yield, and adaptability (e.g. flood and drought resistance) through traditional and/or advanced plant breeding techniques

Quantify varietal and species differences in the ability of grasses, legumes and annual forages to maintain nutritional quality throughout the grazing season and in extended stockpiled or swath grazing systems to help inform producers' seed selection decisions

Investigate and refine regionally-appropriate methods of combining native, tame (annual and perennial) species and extended winter grazing practices to lengthen the grazing season and reduce winter feeding costs, while meeting animal requirements.

Forage and By-products Continued

Investigate methods to better utilize forages and forage by-products.

Identify and develop methods to control noxious weeds throughout the province, including but not limited to leafy spurge, burdock, absinthe, and scentless chamomile.

Determine economic benefits of cover cropping and intercropping throughout different regions of Saskatchewan

Identify or develop improved grazing and range management strategies that optimize forage and beef production from native range, tame perennial pastures, and/or annual/perennial mixtures; along with agronomic and economic benefits.

Develop and/or expand feed and forage qualities within common crops in western Canada

Develop new feed grain varieties with improved feed grain energy yield per acre, N and water use efficiency

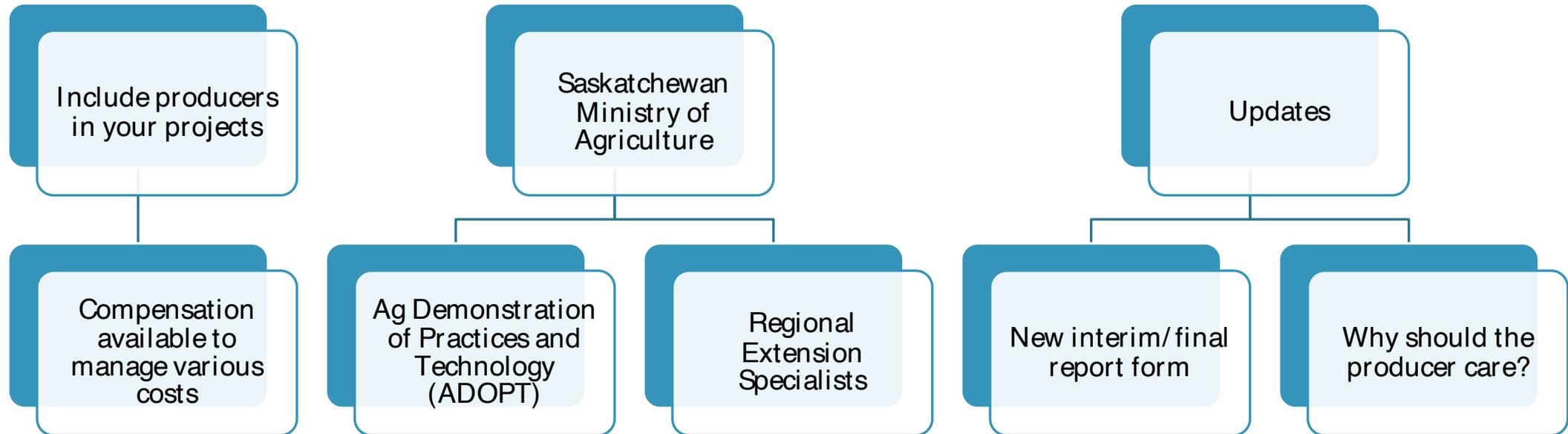
Technology

Develop methods to more easily distribute water to cattle in remote areas

Create products that would ease transitions for cattle into newer areas such as feedlots and backgrounding areas.



Extension activities: Working with producers





Thank you for
coming

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