

Regenerative Beef Production

Regenerative agriculture has become a hot topic in recent months with several documentaries being released (e.g. *Sacred Cow*, *Kiss the Ground*, *Return to Eden*). In addition, there have been a number of initiatives announced related to regenerative practices including Terramera's Global Centre for Regenerative Agriculture, General Mills commitment to advance regenerative agriculture on one-million acres of farmland by 2030 and a million-acre sustainable grazing initiative funded by Walmart Foundation, Cargill and McDonald's aimed at the U.S. Northern Great Plains.

There was interest expressed by the Canadian beef industry to communicate how regenerative practices are implemented on beef operations. While recognizing that regenerative practices are always adapting; if there was to be any communication there would need to be some alignment on what was included in the term or not. Therefore, the Canadian Beef Advisors drafted a Statement on Regenerative Beef Production focused on outcomes and principles.

Draft Statement on Regenerative Beef Production

Regenerative practices are part of a sustainable Canadian beef production system. Because no two farms or ranches are the same, producers adopt principles and elements of regenerative practices that are appropriate for their environment and individual operation in order to achieve desirable outcomes.

Regenerative beef production recognizes the co-benefits of integrating the crop and livestock sectors, which supports nutrient recycling as well as soil health.

This must be viewed from an agricultural systems or community perspective as some individuals may not be able to incorporate all recommended practices on their operation. For example, one neighbour has their crop residue grazed by the second neighbour's beef cows and sells the grain and straw to a third neighbour's feedlot. The third neighbour buys the calves from the second neighbour and sells manure to both. This creates an interconnected system that continues to cycle and rejuvenate itself.

Outcomes:

1. Regenerative practices build soil organic matter, enhance soil biodiversity, and generate new topsoil.
2. Regenerative practices enhance ecosystem services such as: carbon sequestration, biodiversity, water infiltration, the ability of soil to hold water and therefore build resilience against drought/flood
3. Regenerative practices recycle nutrients within an interconnected agricultural system consisting of both livestock and crop production. Nutrients in manure help to offset synthetic fertilizer use and improve organic matter in soils. Livestock also utilize weather damaged crops, residues and by-products not suitable for human consumption, minimizing waste within the system.
4. Regenerative practices strengthen rural communities and the natural ecosystems they are a part of, striving to leave the land and communities better off.

Principles:

1. Utilize a holistic approach that seeks to strengthen ecosystems and community resilience
2. Limits soil disturbance, maintain soil cover, keep living roots in the ground and active as much of the year as possible
3. Optimize plant biodiversity (e.g. manage crop rotations for the ecosystem/region, complex pasture mixtures) including forages, intercrops, polycultures and cover crops into rotations
4. Utilize grazing concepts including a focus on the grazing period to avoid overgrazing, suitable rest periods, animal impact to stimulate the soil, appropriate stock density, and preserve soil cover.
5. Recycle nutrients with grazing and crop-livestock integration

Public Message Testing

In the month of November, Public and Stakeholder Engagement conducted public message testing to determine the awareness of 'regenerative'. As expected, awareness of the concept of 'regenerative agriculture' is fairly low (at 1 in five) compared to other terms (like 'sustainable agriculture' at 1 in 2).

Respondents react positively to the different regenerative agriculture practices used in the industry. The identified outcomes on improving soil biodiversity, recycling nutrients, enhancing ecosystems, and strengthening communities left between 70-75 per cent feeling better about the sustainability in the industry. Familiarity with the term 'regenerative agriculture' is highest in urban respondents and those under 44 years of age, highlighting the opportunity to connect with an important demographic. Overall awareness of regenerative agriculture and beef industry environmental sustainability is low, therefore any information about sustainable practices is likely to be received positively.



Industry Stakeholder Feedback

A stakeholder survey was open between November 23 and January 8, 2021 with 246 responses with national coverage. Overall, respondents were neutral to positive about the industry defining regenerative beef production.

Table 1. How do you feel about the beef industry defining the term “Regenerative beef production”?

	Total	Cow-Calf	Feedlot	Seedstock	Other
Very Positive	26%	20%	16%	20%	21%
Positive	38%	26%	42%	33%	45%
Neutral	28%	20%	21%	33%	26%
Negative	6%	2%	21%	13%	8%
Very Negative	3%	3%	0%	0%	0%

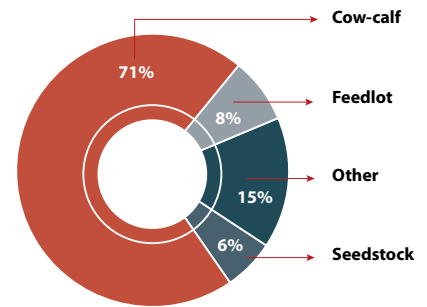
What Does Regenerative Beef Production Mean to You?

Eighty-seven percent provided a written response. Comments focused on regenerative being a closed loop system whereby nutrients stay where they are produced, and fossil fuel, synthetic fertilizer, herbicide, pesticides, and tillage are minimized. Fertility and pest control are managed by adopting and mimicking natural processes. Forward thinking, sequestering carbon by working with nature, building microbes, and soil health. This was connected with the potential of beef production mitigating climate change with carbon sequestration. For many, it meant grass-finished beef only.

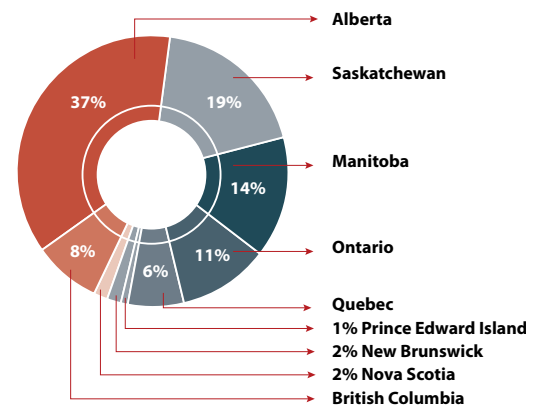
There were many comments related to sustainability. Both positively equating regenerative practices with generational improvement and perpetual sustainability without artificial support. But also negatively, stressing that regenerative means more than sustainable; in that it is rebuilding and improving and not just maintaining the current status quo.

For others it was a marketing term. With a vested interested in industry continuing its work to build consumer awareness for “sustainable beef production” and concern about confusing the consumer with a different term.

Responses via sector



Responses via province



Any Missing Outcomes?

There were five main areas identified that were missing from the outcomes or that needed to be expanded:

1. Nutrition

- Connection between livestock health and benefits to people health
- Focus more on human health as opposed to "strength of rural communities" through thriving and improved diversity of plant and animal communities

2. Animal Health

- Regenerative practices can also help to decrease parasite load on cattle and contribute to increase immunity and gains. This would decrease the use of antibiotics and parasite control products
- Emphasis on health and welfare of the animals. Reg ag should underscore good animal husbandry

3. Lifestyle

- Smaller farms, less reliance on shiny big iron, back to lifestyle, less of a business focus
- Time saver, cattle do more of the work to free time for other tasks
- Must have value-added to the end-product to offset stewardship costs

- Focus on direct-to-consumer marketing. Promote locally grown
- Enhances social relationships and strengthen local economies

4. Economics

- Lacks any reference to profitability
- Better net income for producers with reduced inputs
- Greater resilience to drought/flood that supports cash flow

5. Diversity

- Plant biodiversity is too narrow. It should be expanded to include all diversity
- The microbial world ‘good bugs,’ and benefits to perennial grasslands are not addressed
- A measurable difference in the numbers and frequency of wildlife (i.e. more pollinators, birds)

The statement "interconnected agricultural system consisting of both livestock and crop production" was challenged. While some respondents claim that regenerative agriculture does not have to consist of both. Others noted the very real challenge of getting crop and livestock producers to work together, particularly on manure spreading.

What's Missing from the Principles?

- The definition of "Holistic" is debated, a "systems" approach or "mimicking nature" would be more appropriate
- Grazing needs to capture timing and duration of grazing period; and "recovery" not "rest"
- The principles are too specific, they need to be qualified with "may" use these principles
- Add something about reclamation of degraded lands. It is possible to use regenerative grazing to reclaim and continue to improve damaged soils.
- Regenerative practices are integrated with the local flora and fauna to enhance their sustainability. Consideration of the local fauna is missing. Different regions will have different practices, dependent on many different factors

Concerns Raised

Sixty-two per cent of respondents provided written comments. There were six key concerns identified in the comments provided.

- 1. "Regenerative Agriculture"** is a passing fad, here today gone tomorrow. It sounds like a push for holistic, grass-finished and organic management. Organic farms are promoting themselves as "regenerative" this could lead to confusion by consumers expecting the same attributes.
- 2. Sustainable beef production** is a better term to heavily emphasize with and promote; because it relates to economic, social, and environmental sustainability. Regenerative is environmental only, so can be used, but should be secondary messaging. Put energy into promoting "Sustainable beef" now that it is getting traction.
- 3. Feedlots** do not qualify for regenerative beef production.
- 4. Climate connection:** It was noted that the benefits to soil carbon sequestration from regenerative agriculture is a still being debated. Particularly as grass-finished beef tends to have higher greenhouse gas emissions and quantification of soil carbon sequestration varies significantly based on soil, rainfall and grazing management.
- 5. Protect Niche Markets:** For those within the regenerative movement they are looking for premiums and don't want something that will water down the movement by making it mainstream. While there was acceptance that speaking and promoting regenerative beef production is a great idea and needs to be done. However, it should be done by organizations and producers who are actively practicing these principles, not the national beef organizations.
- 6. Greenwashing:** It was noted that the majority of beef producers must be using these practices before it is used as a marketing tool. To say the practices outlines are currently widespread was questioned. Consequently, using the term "regenerative" to describe mainstream practices would be considered greenwashing.

Prioritize Producer Not Consumer Communications

There needs to be more information at the producer level about regenerative practices before it is discussed with consumers or the public. This information needs to be two-fold. First is the research in addressing gaps in knowledge and the science. It was noted that in particular, polycrops don't always work as designed. More work is needed in this area to determine what is suited to the Canadian environment. Second, is the extension of practices to producers. Adoption of regenerative practices requires patience and long game thinking. It will be years before significant progress can be achieved.

But there were also limitations to the regenerative movement identified. Most of the concepts are developed on tame grass. There is a need to recognize what can happen on tame versus native grass. There are existing principles for native grass management that are not covered by "regenerative".

In addition, there appears to be confusion about the use of "fringe" practices that are not necessarily "core" to the regenerative movements. With questions about the use of summer fallow, compost teas, and equating year-round grazing with carbon neutrality (which is only true in areas with high carbon sequestration rates per acre).

Research

It should be recognized that the Beef Cattle Research Council (BCRC) is actively doing research around the key topics related to regenerative practices. BCRC has a role to provide science-based measurement to support producer adoption of beneficial production practices that contribute to economic and environmental sustainability.

Resources include topic pages and webinars on cover crops, adding diversity with intercropping, rangeland and riparian health. Decision making tools are available for adoption of water systems, carrying capacity, and selecting forage mixes.