

## Regenerative Agriculture Position Statement

### Executive Summary

- Regenerative agriculture should be built on practices that do not rely on agrichemicals such as fossil fuel derived pesticides or fertilizers, as these are known to have detrimental effects on soil health.
- Regenerative agriculture should be based on continuously adding and improving practices that maintain or enhance soil health and carbon capture.
- Regenerative agriculture should be based on a holistic approach where total systems health is valued over short-term gains.
- Regenerative agriculture should encompass a collection of practices balanced in such a way as to positively affect net soil health and carbon capture gains. Practices such as tillage should not be shunned completely, and there is recognition of its value in soil building and long-term carbon capture so long as it is accompanied by practices that compensate for or neutralize any negative effects.
- Regenerative agriculture should aim to achieve net gain and long-term capture of carbon in soil, not quick gain and quick release.
- When measuring carbon capture, soils must be tested down at least one meter, as it is known that carbon in the upper 10 to 20 centimeters can come and go, and that longer-term storage happens below these depths.
- Any meaningful regenerative agriculture or food and fiber labels or claims must be based on a clear and accepted definitions of what it means. The Regenerative Organic Certification (ROC) program is one example with definitions, a framework (standard), annual third-party oversight and a recognizable mark.
- Claims made about using regenerative agriculture practices without clear definitions, a standard, and third-party oversight and enforcement are not meaningful for consumers and could introduce confusion and an unlevel playing field in the market.

## Canada Organic Trade Association's Regenerative Agriculture Position Statement

Organic started as a soil health movement in the early 1900's. Pioneers and visionaries such as Sir Albert Howard, Rudolf Steiner, J.I. Rodale, Lady Balfour, and in more recent times leaders like Maria Rodale and Eliot Coleman (**Figure 1 - Regenerative Organic Pioneers**), inspired this way of agriculture that focused on building the health of the soil without reliance on agrichemicals like synthetic pesticides and fertility inputs.

Despite the recent growth and popularity of organic and its reputation for avoiding synthetic pesticides and fertilizers, the foundation of organics is not based on the avoidance of these inputs, but rather on the active pursuit of nurturing the health of the soil to the highest levels possible. Looking to nature teaches us what healthy soil is, and how soil health can be gauged against the healthiest soils, created in natural forests, fields and prairies. Nature is considered to be the foundational bedrock of information that organic practitioners can turn to when seeking agronomic solutions to challenges. When observing undisturbed nature, the foundation for all growth above ground is based on a healthy and diverse community of life in the soil.

Life in soil is not referring to a supernatural entity possessing the soil, but rather it is simply referring to the collection of lifeforms that live in the top layers of the covering of the earth that we call topsoil. Modern soil scientists refer to the lifeforms living in the soil as micro and macro organisms such as insects, bacteria and fungi. Healthy, active soil life ensures better nutrition for plants roots below the ground and this lays the foundation for the health of the stems, foliage and flowers above the ground.

The organic farmer's job is to foster optimal conditions for the proliferation of a balanced ecosystem of the lifeforms living in the soil. Organic agriculture relies on the health of the soil to provide nutrition to plant roots, so that they in turn can pass on that health to the people and animals eating the plants. This is what soil health means to an organic farmer, beyond the legal definitions, standards and annual inspections.

Regenerative agriculture is a concept that has recently gained popularity. There is no universal definition, agreed upon standard or government regulation around the use of the term anywhere in the world at the time of this writing in the summer of 2020. Many groups use the term regenerative agriculture to describe a type of agriculture that promotes carbon sequestration in the soil, thus removing it from the atmosphere where it contributes to climate change.

Since carbon is not captured by chemicals or inert minerals in the soil but is rather taken up by living soil organisms and living plants, active and healthy soil life

and plant proliferation are essential to carbon sequestration. Organic matter and charcoal (*terra preta*) can also help to store carbon. Carbon cycles through the living organisms in soil, so if the living organisms are removed, the carbon stored will be released back into the atmosphere over time. Thus, a continuous nurturing of the life and plants in and on soil ensures a continuous capturing and storing of carbon for the long term. Soils with higher levels of carbon also have better water holding capacity and are more resilient to the weather extremes brought on by climate change so they not only offer a solution but also an adaptive advantage to mitigate the effects of climate change.

The aims of both regenerative agriculture and organic agriculture are one and the same. Both systems aim to capture and store higher levels of carbon in topsoil. Both systems build soil health capable of supporting healthy and robust crops.

The concept of regeneration is that of rebuilding health from current levels. Like nature, regeneration cannot stand still. It is a goal to be pursued, not a final goal to be reached. An ever-evolving state of improvement, regeneration is the reversal over time of degeneration, the process by which intricate living systems can become broken over time due to imbalances, harmful inputs and harmful practices. It is a rebalancing of natural systems towards a state of optimal health and equilibrium. Organic agriculture aims to be the most regenerative form of agriculture possible and by practicing organic agriculture with an emphasis on regenerative practices farmers can be part of the solution to environmental degradation and climate change.

What will it take to move from an agriculture that degenerates to one that regenerates? It is important to recognize that agricultural practices on their own can either degenerate, sustain or regenerate the life and carbon in the soil. The sum of these practices, overall, creates a sliding and complex scale where soil conditions can move in either direction in response to what the soil is exposed to. Responsible organic farming is the art of constantly balancing the effects on the soil so that a net improvement in soil health and carbon holding is achieved and maintained over time.

Being an organic farmer often leads to humility, when recognizing the small role that humans ultimately play in improving soil health. Many if not most of the human activities related to farming since the dawn of agriculture have had detrimental effects on soil health. Farming is in essence a disturbance event, where nature is being interrupted. Organic farming is the art of minimizing the sometimes necessary disturbance events, and then setting in motion a cascade of succession, recovery and renewal events to minimize the negative impact of these actions. In fact, nature has a built-in succession, recovery and renewal mechanisms to deal with natural disturbances, like heavy pruning during storms, droughts or fire. It is the farmer's skill in assisting nature in applying the succession, recovery and renewal mechanisms that will determine the overall health of the farming system.

For example, when tillage is used, if a green cover crop is turned under to feed the microorganisms, it can compensate for the disturbance and speed recovery. If no recovery mechanism is applied, the damage from the tillage may be detrimental. The attentive organic farmer is always seeking to balance multiple factors in support of continued healthy life in the soil. There are now several studies comparing conventional vs. organic systems that demonstrate the significant positive effects of organic recovery practices. **(Figure 2)**

The position of the Canada Organic Trade Association is that organic methods must be the foundation of any agricultural system that aims to be regenerative. Many conventional disturbance events that fall outside the scope of organics are too grave or repetitive to be overcome by succession, recovery and renewal mechanisms. Organic has proven during the last century that agriculture can be achieved without the use of agrichemicals derived from the extraction of non-renewable resources that release carbon into the atmosphere, in order to provide pest control, weed management and soil fertility. Since through repeated use these tools have long-lasting detrimental effects on the life in the soil, and do not allow for successful recovery mechanisms, they do not belong in agricultural food production systems that claim to be regenerative.

There are many claims circulating around the idea that chemical no-till systems are more regenerative than organic systems that incorporate some form of tillage. This is of concern, seeing as the less commonly spoken about component of no-till farming systems in the use of highly toxic herbicides such as glyphosate, paraquat or dicamba.

Organic farmers are well aware of the risks of the disturbance effects of tillage. Yet agriculture must engage in some tillage (in order to avoid the use of agrichemical reliance). Tillage can be over-used and will have a detrimental effect on overall soil health if not countered with other succession, recovery and renewal practices. However, the conversation about regenerative agriculture cannot be reduced to pitching conventional agrichemical intense no-till agriculture against organic regenerative practices that include conservation or minimal tillage alongside beneficial practices that counter this disturbance event.

The idea that no-till is by default more climate-friendly than tillage is an assumption founded on a short-term, somewhat reductionist approach to science that ignores the bigger picture and the overall longer-term advantages to organic farming systems that often incorporate some form of tillage. The result of this focus on no-till is that many well-meaning farmers are inadvertently poisoning themselves, their families, our food supply and our planet under the false assumption that glyphosate or other agrichemical herbicides are somehow more regenerative than even conservation tillage, the most valued tool in many organic farmers' tool kit. In fact, this appears to be a significant factor in many farmers' choice not to adopt organic methods, as they have come to see herbicide use as more environmentally friendly than any form of tillage.

If we are going to be successful in moving agriculture away from being largely a destructive force on the climate, we must not support programs like carbon credits linked to conventional no-till, which will create license to continue agrichemical assisted agriculture. Supports must be tailored towards agricultural practices that conserve non-renewable resources and that build overall soil health to ultimately maximize carbon capture.

Healing our environment and global climate is an effort that cannot be solved by looking only at single components of agricultural practices. It must be addressed in a holistic way, looking at our world as a living ecosystem, and agriculture as an activity that either supports or harms the health and wellbeing of life on earth. We can choose agriculture that feeds us without also harming our natural life support systems otherwise known as nature.

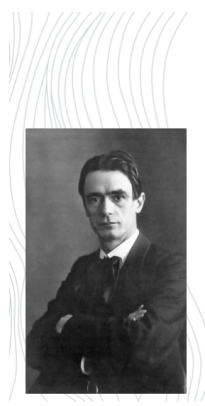
Organic has a long history of working towards global ecosystems health and the Canada Organic Trade Association welcomes the renewed focus brought by a collective look at regenerative practices in agriculture. With compassion and humility, we commit to sharing what we have learned on the organic path thus far and embracing new ideas that can shift humanity's impact on the soil and the health of our planet away from degenerative practices towards a more regenerative future.

**Figure 1 - Regenerative Organic Pioneers**



**Sir Albert Howard**  
 1873 – 1947

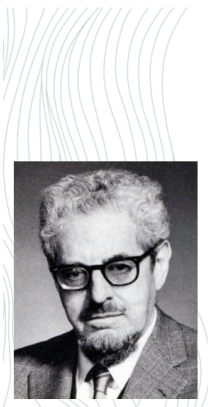
- First westerner to document and publish the Vedic Indian techniques of sustainable agriculture, now better known as organic farming
- Howard has been called the father of modern composting, for his refinement of a traditional Indian composting system
- His 1940 book, *An Agricultural Testament*, is a classic organic farming text



**Rudolf Steiner**  
 1861 – 1925

Father of Biodynamic agriculture

- Promoted agriculture that increased soil fertility without the use of chemical fertilizers and pesticides.
- Founded biodynamic agriculture, which contributed to the development of modern organic farming.



**Jerome Irving Rodale**  
 1898 – 1971

- He popularized the term "organic" as a term for growing food without pesticides
- He founded Rodale Press in 1930, publishing *Organic Farming and Gardening* magazine in 1942
- Believed healthy soil required compost



**Lady Balfour 1899-1990**  
 Founding figure in the organic movement.

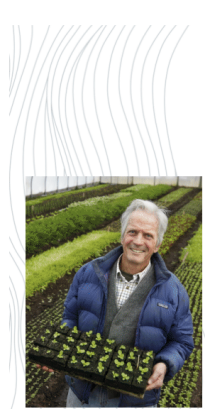
Photograph by Elliott & Fry, 1943

- In 1946, Co-founded and became the first president of the Soil Association
- 1939, she launched the Haughley Experiment, the first long-term, side-by-side scientific comparison of organic and chemical-based farming
- 1990, the day after her death, the Conservative Government, under Margaret Thatcher, offered grants to encourage British farmers to change to organic methods.



**Maria Rodale, Granddaughter of JI Rodale**

Author of five books, including *Organic Manifesto: How Organic Farming Can Heal Our Planet, Feed the World, and Keep Us Safe* (2011, Rodale Books).



**Eliot Coleman**

*“Extensive modern scientific research into the marvellously complex soil micro-biome is revealing the vital ecological processes that support organic agriculture. This research underscores the intuitive brilliance of the founding organic farmers.”*

**Figure 2 - Additional Studies**

<u><b>Studies:</b></u>	
<b>The Organic Center:</b>	<u><b>Organic farming improves soil health- more carbon storage, fertility and biological activity than conventional</b></u>
<b>UC Davis:</b>	<u><b>Composting key to sequestering carbon in soil</b></u>
<b>University of Illinois:</b>	<u><b>Synthetic nitrogen destroys soil carbon and undermines soil health</b></u>
<b>Organic Agriculture Centre of Canada: (OACC)</b>	<u><b>OACC Science Cluster</b></u>