

# As above, so below: building community in soil and agriculture

Our soil is constantly changing, just as our rural communities change. How we maintain and build resources in these communities depends on how we define and manage them.

Community is a place or space where citizens or life forms prevail.

Think of your community as a community of like-minded individuals working together for shared goals — a holistic resource management group, a church committee or a marketing group.

Culture is a set of learnings about how we as a people can persevere and survive in a place.

If we think about these definitions, we see how they can be applied to both soil and community. For both, social space is in continuous creation by its citizens, who have authority and responsibility for their space.

These associations will naturally tend to grow according to the gifts of the citizens.

Conventional input agriculture tends to focus on deficiencies of the soil rather than on the soil's inherent gifts. The industrial model of the past century is based on linear thought processes that identify our resource base as unlimited.

Western governments still use growth as the determining factor for a healthy economy, though more citizens are questioning the sustainability of this approach.

## Beneficial resource

Adding compost is one of many agriculturally beneficial practices that revitalize and energize soil bacteria and flora. Thinking more deeply about compost helps us to see our connection to natural cycles. As we rethink waste (straw, manure and municipal solid waste), we can see it as a resource, as compost that can feed and nurture our soil, plants, animals and health. We are not separate entities from our soil; we are our soil.

A healthy soil needs a stable community of fungi, bacteria, nematodes and worms, as well as air and water, to effectively cycle nutrients, break down organic matter and improve soil tilth.

Soil biological processes are responsible for much of the conversion of nutrients to forms that plants can use — nearly 75 percent of available nitrogen and 65

percent of available phosphorus in soil.

"A healthy, beneficial nematode population can recycle 17 to 35 kilograms per hectare (seven to 14 kg per acre) of nitrogen as they control bacteria and fungi populations in soil," says Jill Clapperton, formerly of Agriculture Canada's research centre in Lethbridge.

Communities of microorganisms in the soil are destroyed by synthetic chemicals, tillage, erosion, drought and floods.

When the number and diversity of micro-organism populations are reduced, it takes time for the soil communities to rebalance the nutrient cycling and soil aggregating processes. When this happens, our crops are less able to obtain nutrients, making them more vulnerable to disease, pests and unfavourable weather conditions.

Applying well-made compost to soil can be beneficial for many reasons, but primarily because it reintroduces a diversity of micro-organisms to the soil biota to jump start the nutrient cycling process.

Given the expense of importing phosphorus and nitrogen, rebuilding the soil populations that can help crops access nutrients makes increasing sense.

Similarly, we need a diversity of people to rebuild our rural communities. Regardless of what husbandry techniques we use to grow our crops, those of us working in agriculture need to work together toward a new mindset.

So few of our citizens have a direct connection with agriculture. Urban and rural alike, we need to understand that when we buy food grown in our local regions, we are supporting the health of our farm communities as well as our families.

To create a respectful understanding of where food comes from and what decisions need to be made to ensure long-term sustainable food production and distribution, we need to support the health and diversity of the natural world and of our human communities.

Education on connection and diversity will serve to rebuild our rural landscapes, both above and below the soil line.

## Organic Matters



Janine Gibson

*Janine Gibson is a senior organic inspector and trainer in Western Canada. She thanks master composter Gerry Dube of [bdmcomposting.com](http://bdmcomposting.com) for his research and writing support with this article. She can be reached at 204-434-6018 or [janine@rrcc.ca](mailto:janine@rrcc.ca).*