

SOIL Benefits of Soil Organic Matter

Soil organic matter (SOM) is vital for soil processes essential to plant growth. Nova Scotia soils are (generally) naturally low in SOM, and intensive crop production can further deplete it.

Depleted soils combined with climate change (including rising temperatures, increased precipitation, and more frequent extreme weather) leaves agricultural soil in Nova Scotia vulnerable to drought, flooding, erosion, nutrient loss, and reduced productivity.

SOM helps to:

Provide and retain nutrients

Reduced fertilizer costs

Enhanced nutrient cycling

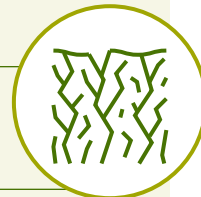
Protect ground and surface water



Strengthen soil structure and increase aggregate stability

Reduced soil erosion

Maintained soil pores for water and air movement



Increase soil water-holding capacity

Reduced flood risks

Increased soil resiliency during drought

Maintained productivity/plant-growth during wet and dry periods



Adaptive Practices

Adopt BMPs to help conserve and increase SOM

Adding raw plant material like mulches, plant residue, chop-and-drop cover crops will physically protect soil and provide nutrients and carbon when broken down

Adding manure can provide a significant amount of nitrogen and other nutrients – injection or incorporation reduces atmospheric losses, i.e. nitrogen gas

Note: plant, food and/or animal waste material that is properly composted can be more stable in soil resulting in:

Reduced atmospheric nitrogen and carbon loss

Reduced harmful pathogen over-exposure

Reduced weed seed presence