NOVA SCOTIA Climate Smart Farming

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