

UNDERSTANDING SOIL HEALTH IN A CHANGING CLIMATE



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Abstract

Soils play an integral role in ecosystem services that are threatened by climate change and the intensification of agriculture to meet global demand. Without maintaining and improving soil health, we would compromise the ultimate goal of sustainable agriculture in the face of changing climate. Soil health is defined as the continued capacity of soil to support adequate production of biomass for human needs, while maintaining other ecosystem services, such as climate regulation or biodiversity conservation. There is a growing challenge to include goals and measures of long-term environmental sustainability through soil health metrics to address the adoption of beneficial management practices to offset climate change pressures and to satisfy changing public perception. There is also an increasing concern that many current metrics lack sufficient sensitivity to resolve differences from beneficial management practices and that certain indicators have excessive inter-laboratory and field variability. This talk will focus on how soil health fits into the context of a changing climate, including discussion of current developments in soil physical health indicators and agronomic research. Insight will also be provided into producer perceptions of soil health and how beneficial management practices may improve soil health while also mitigating the pressure of climate change.

Biography

Dr. Henry Chau is a Research Scientist in Soil Conservation and Land Resilience at The Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada.

Dr. Chau's research examines how environmental stressors and agricultural management practices impact soil resilience and ecosystem services. His focus is on understanding the properties and processes in the cycling of water and nutrients in soils and their implications for soil health and environmental impact. His current research programs involve an examination of the beneficial management practices, cropping varieties, and rotation on soil health with a focus on improving carbon sequestration and reducing greenhouse gas emissions.