

Project Title: Vegetation Management for Long-Term Productivity and Enhanced Ecosystem Services in Canadian Semi-Arid Vineyards

Project ID: Grape and Wine Science Cluster - Activity 4

Project Duration: 2024-2028

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Study Objective: to enhance our understanding of how non-crop vegetation can be managed to augment ecosystem services in vineyard agro-ecosystem, with the broader goals of reducing inputs while maintaining, or enhancing wine grape quality.

In the 2024 growing season, four primary cover crop groups—nurse crops (cereals), legumes, grasses, and brassicas—were tested across five commercial vineyards. Based on these trials, a practical visual factsheet has been developed to assist growers in identifying cover crop species at various growth stages. This resource equips vineyard managers with valuable information for selecting, monitoring, and managing cover crops to optimize their benefits throughout the growing season.

Nurse Crops:

Habit: FAST-GROWING, QUICK TO ESTABLISH

- Spring Oats
- *Fall Rye*
- Spring Triticale

Legumes:

Habit: SLOW-GROWING, NITROGEN FIXING

- Purple Prairie Clover
- Red Clover
- Dutch White Clover
- Alsike Clover
- Garbonzo Beans
- Sainfoin
- Creeping Rooted Alfalfa

Grasses

Habit: SLOW-GROWING, DROUGHT TOLERANT

- Western Wheatgrass
- Intermediate Wheatgrass
- Crested Wheatgrass
- FAST-GROWING
- Italian Ryegrass
- Perennial Ryegrass
- Meadow Barley

Brassicas:

Habit: FAST GROWING, REDUCE COMPACTION, RECYCLE NUTRIENTS FROM DEPTH

- White Mustard
- Camelina
- Daikon Radish

NURSE CROPS – Quick to establish, fast growing rate

Spring Triticale
(Tritocosecale sp.)



Spring Oats
(Avena sativa)



LEGUMES – Nitrogen fixing

Purple Prairie Clover
(*Dalea purpurea*)



Red Clover
(*Trifolium pratense*)



Dutch White Clover
(Trifolium repens)



Alsike Clover
(Trifolium hybridum)



Garbonzo Beans
(Cicer arietinum)



Sainfoin
(Onobrychis viciifolia)



Creeping Rooted Alfalfa
(Medicago sp.)



GRASSES (i) – Slow growing rate, drought tolerant

**Western Wheatgrass
(*Pascopyrum smithii*)**



Meadow Barley
(Hordeum brachyantherum)



GRASSES (ii) – moderate growing rate

Italian Ryegrass
(*Lolium multiflorum*)



**BRASSICAS – Fast growing, reduce compaction,
nutrient cycling form depth**

White Mustard
(Sinapsis alba)



Camelina
(*Camelina sp.*)



Daikon Radish
(*Raphanus sativus*)

