

Vegetation Management for Long-Term Productivity & 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.

During the 2024 growing season, four primary cover crop species groups—cereals (used as a nurse crop), legumes, grasses, and brassicas—were tested across five commercial vineyards in the Okanagan Valley, BC. Prior to field implementation, a germination trial was conducted in the greenhouse at the Summerland Research and Development Centre. Photos from greenhouse and field trials were used to create **a practical visual factsheet**, helping growers accurately identify cover crop species at different growth stages. **This resource provides vineyard managers with essential information for selecting, monitoring, and managing cover crops**, enabling them to maximize agronomic and ecological benefits throughout the growing season.

Nurse Crops

Habit: Fast-growing, quick to establish

- Spring Oats
- Fall Rye
- Spring Triticale

Grasses

Habit: Slow-growing, drought tolerant

- Western Wheatgrass
- Intermediate Wheatgrass
- Crested Wheatgrass

Fast-growing

- Italian Ryegrass
- Perennial Ryegrass
- Meadow Barley

Legumes

Habit: Slow-growing, nitrogen fixing

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

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 (*Tritosecale* sp.)



Spring Oats (*Avena sativa*)



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Purple Prairie Clover (*Dalea purpurea*)



Red Clover (*Trifolium pratense*)



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Red Clover Flower Head © openverse.org
Purple Prairie Clover Flower Head © openverse.org

Legumes

Nitrogen fixing

Dutch White Clover (*Trifolium repens*)



Alsike Clover (*Trifolium hybridum*)



Garbonzo Beans (*Cicer arietinum*)



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Legumes

Nitrogen fixing

Sainfoin (*Onobrychis viciifolia*)



Legumes

Nitrogen fixing

Creeping Rooted Alfalfa (*Medicago sp.*)



Grasses (i)

Slow growing rate, drought tolerant

Western Wheatgrass (*Pascopyrum smithii*)

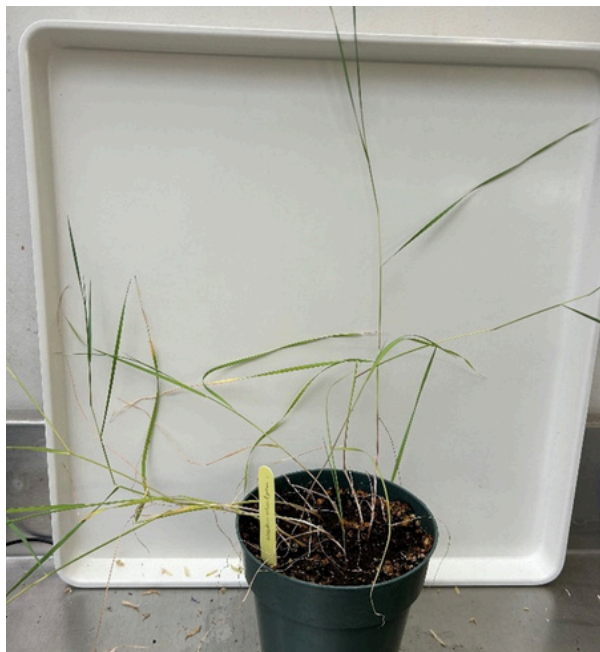


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Grasses (i)

Slow growing rate, drought tolerant

Meadow Barley (*Hordeum brachyantherum*)



Grasses (ii)

Moderate growing rate

Italian Ryegrass (*Lolium multiflorum*)



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Brassicas

Fast growing, reduce compaction, nutrient cycling from depth

White Mustard (*Sinapsis alba*)



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Brassicas

Fast growing, reduce compaction, nutrient cycling from depth

Camelina (*Camelina sp.*)



Daikon Radish (*Raphanus sativus*)

