



1

Background

- Herbicide use in vineyards to manage weeds.
- Herbicides creates bare soil, increasing risk of erosion and soil health
- Increased herbicide \$
- Organic vineyards have few options for herbicides, and rely on manual labour (cultivation).
- Under-vine covers crops (UVCC) are an option for managing weeds in vineyards.

Benefits of UVCC include:

- Weed management
- varying degrees of impact on vine growth
- soil health benefits
- Reducing leaching of nutrients and pesticides
- Save money



2

Objectives

- Replicated Trial
 - Establish 5 undervine (UVCC) treatments (3 UVCC, natural veg. and cultivation-hoe)
 - UVCC based on research from NY, Virginia, BC and ON.
 - Evaluate the use of UVCC on weed management, yields, and nutrients.
- Screening Trial
 - small plots of UVCC used in other crops to evaluate their potential in vineyards.



3

Selecting an under vine cover crop

- Vineyard should be mature
- Weed mgmt only,
- Not managing vigour
- Don't require mowing
- UVCC establishment- irrigation?
- perennial/ annual



4

Experimental Design

Replicated Trial

- 2 sites
- Applied by hand
- Treatments:
 - Hoe
 - Natural vegetation
 - Buckwheat
 - Birdsfoot trefoil (P)
 - Rosette forming turnip
 - Subterranean clover
- weed /cc dry weight, vigour, yields, petiole nutrients



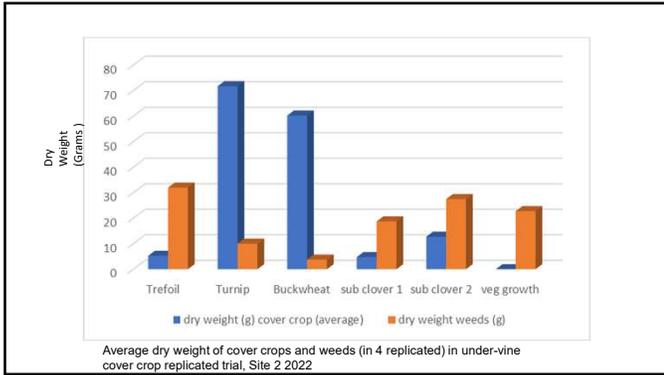
5

Screening trials (1 panel)

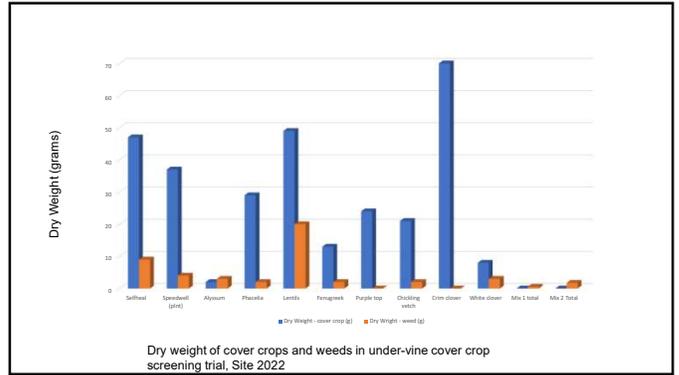
- Self heal and speedwell-Transplants
- Self heal seed
- Marjoram
- Purple top turnip
- Phacelia
- Alyssum (P)
- Fenugreek
- Lentils
- Chickling vetch
- Crimson clover (RS)
- White Clover (P)
- Mix 1
- Mix 2



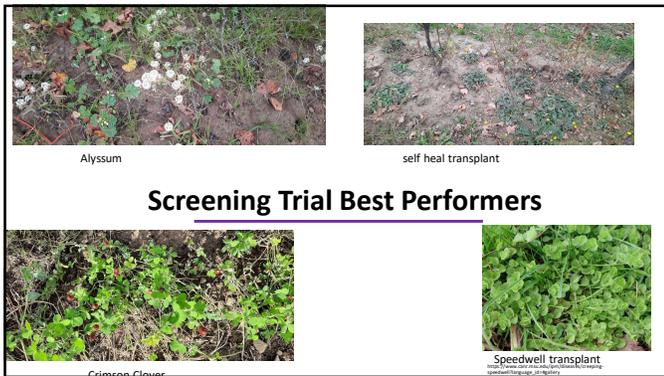
6



7



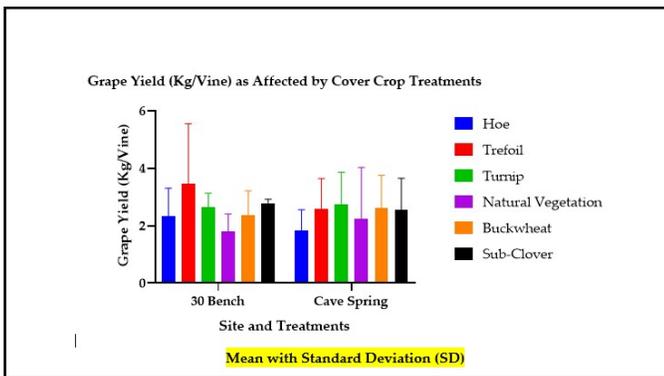
8



9



10



11

Moving Forward

- Large scale trials
- Perennials
- Mechanical applications
- Screening other cover crops
- Long term impact on soil health
- Impact on pollinators
- Impact on pests –virus, vine decline
- Continued screening
- Impact on vigour
- CC selection Site specific

12



Acknowledgements

- Hort Crops Ontario (OMAFRA) initial funding
- MVIP/OGWRI for funding this project.
- Fresh Grape Growers of Ontario
- Dr Justine Vanden Heuval, Cornell
- 30 Bench Winery and Cave Springs
- Anne Verhallen-Cover crop Queen
- Dr. Tejendra Chapagain, stats
- James Dyck, Stephanie Visser, OMAFRA harvest helpers
- Skye Earley and Rebecca Marshall (summer students)