



Hop Cover Cropping

Lily Calderwood

Plant and Soil Science

University of Vermont



The
UNIVERSITY
of VERMONT

EXTENSION

Cover Crop:

Field planting with the primary purposes of increasing soil water-holding capacity, decreasing soil erosion, fixing nitrogen, **controlling pests** and weeds.

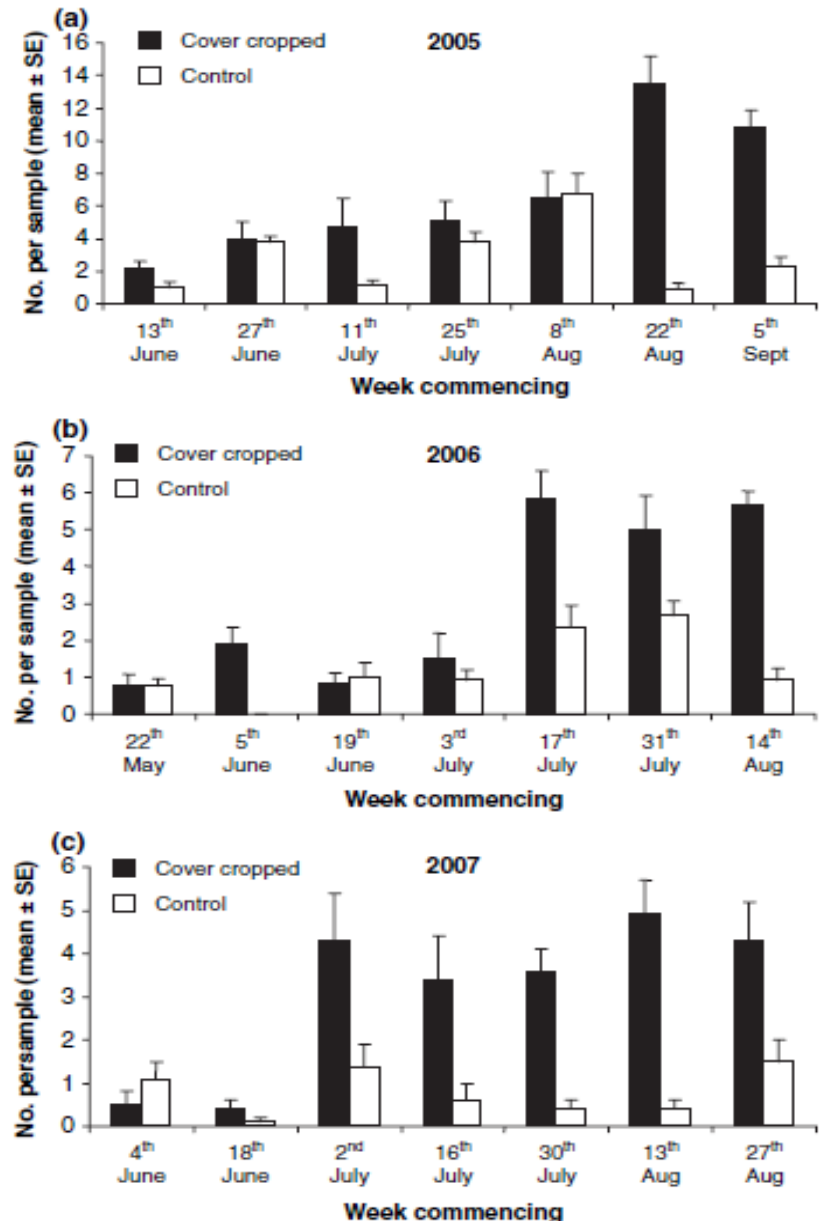
Cover Crop Hypothesis

↑ Plant diversity (habitat)

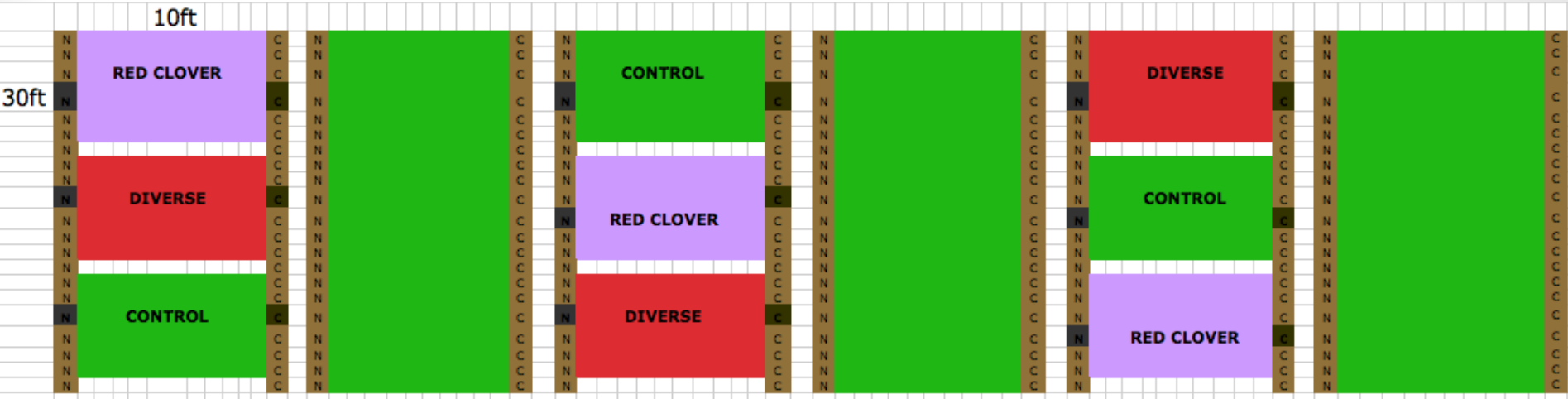
↑ BOTH # pests and # natural enemies

↓ Pest abundance & damage over time


Spiders in Hopyard Ground Flora



Study Plots



Key

	Mowed Control
	Red Clover
	Added Diversity
	Sample space
	Mulch

N = Nugget Variety
C = Cascade Variety

Control

=



Red
Clover

=



Added
Diversity

=



1. Do different cover crop types effect #pests or #NE s on hops?

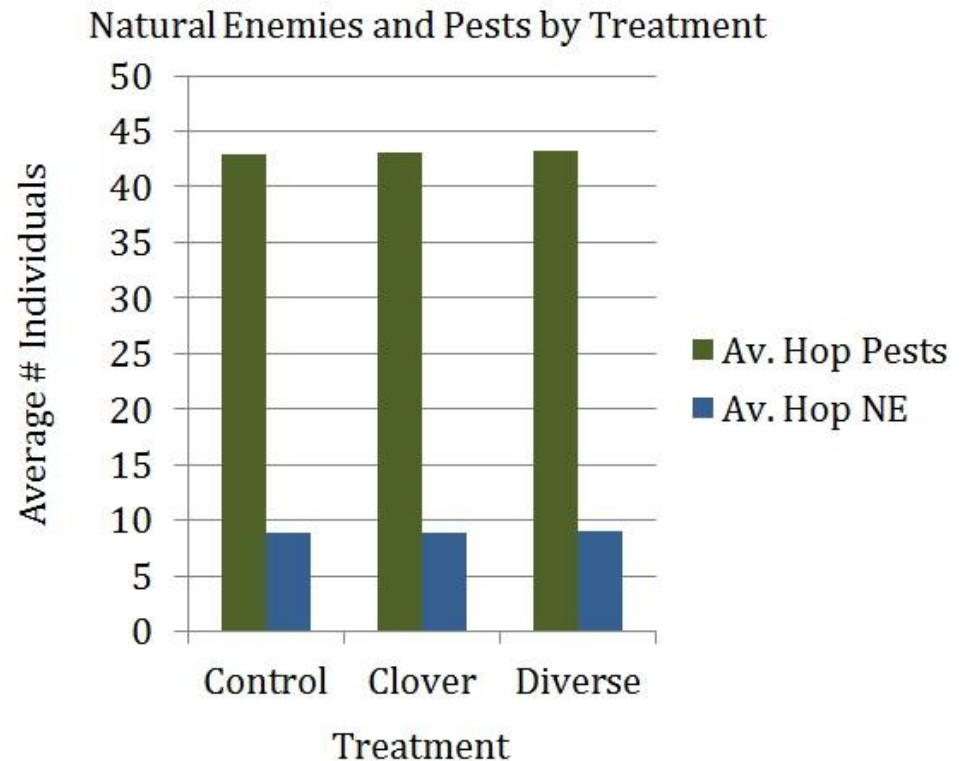


Not yet.

- No significant difference between control, clover, and diverse treatments in # of pests OR # of natural enemies on hop plants

Why?

- Cover crops mature overtime
- Arthropods travel
- Cover crop treatments are close to each other
- Better management practice



2. Are there hop quality or yield differences between cover crop types?

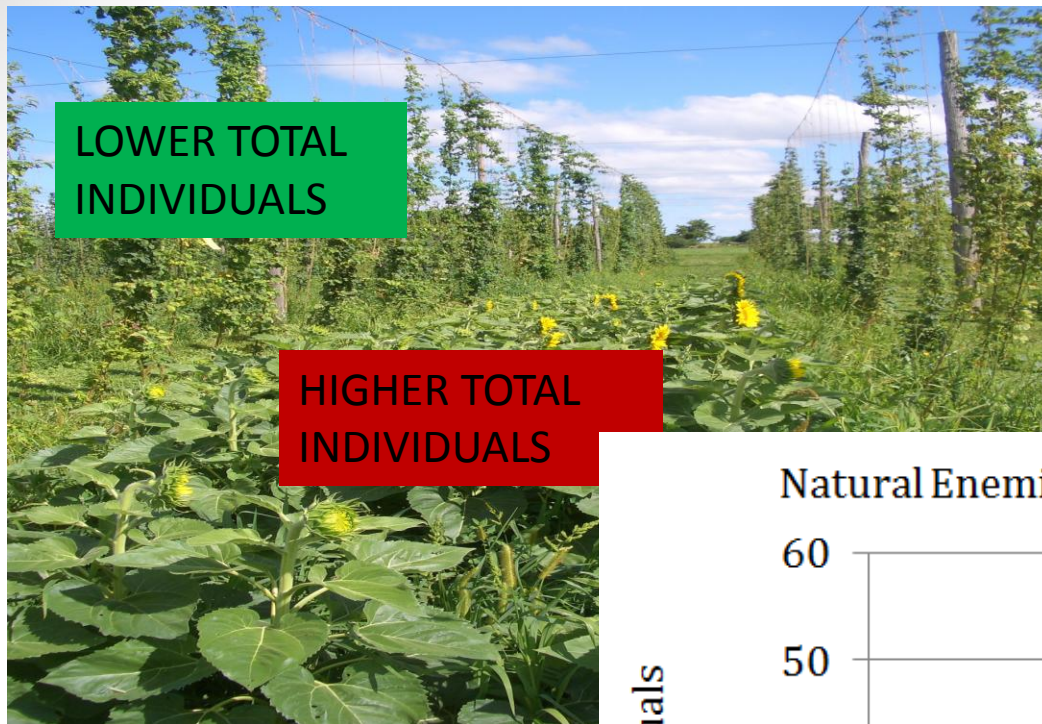
- No significant difference in hop quality or yield in any cover crop treatment.
 - Cascade or Nugget

Conclusion:

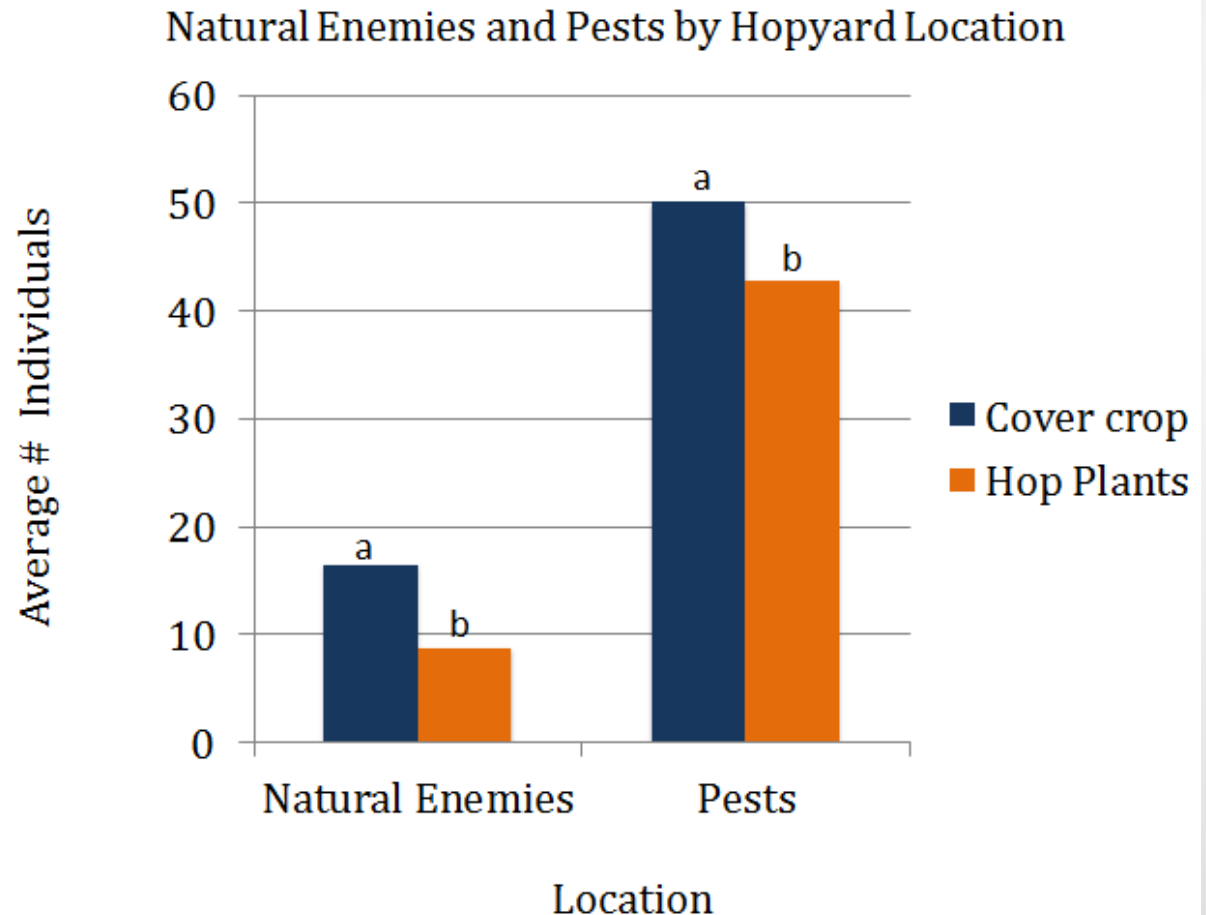
Cover crop presence did not interfere with hop product in 2012



3. Ecological Complexity as Expected



Elevated
arthropod
community
where habitat
complexity
provided



Thank You

- Dr. Heather Darby (Advisor)
- UVM Crop and Soils Team!
- Northeast IPM Center
- Northeast Hops Alliance & IPM Working Group
- Northeast SARE
- Roger Rainville, Dr. Josef Gorres, Dr. Alison Brody, Dr. Scott Merrill, Dr. Yolanda Chen, Jon Trumel, PSS Grad Students

Literature Cited

1. Grasswitz, T., & James, G. (2009). Influence of hop yard ground flora on invertebrate pests of hops and their natural enemies. *Journal of Applied Entomology*, 133, 210-221.
2. Lu, Y. C., K. B. Watkins, J. R. Teasdale, and A. A. Abdul-Baki. 2000. Cover crops in sustainable food production. *Food Reviews International* 16:121-157
3. Tooker, J., & Frank, S. (2012). Genotypically diverse cultivation mixtures for insect pest management and increased crop yields. *Journal of Applied Ecology*, 49, 974-985.