



Mow and Cover: Cover Crop Management Using No-till Practices in a Market Garden

Benjamin Alles

Department of Sustainable Agriculture and Food Systems, Kwantlen Polytechnic University

Introduction

- No-till management, cover cropping, and mulching can improve soil health.
- Labour-efficient systems that combine these tactics without increasing weed competition are needed for small-scale organic vegetable growers.

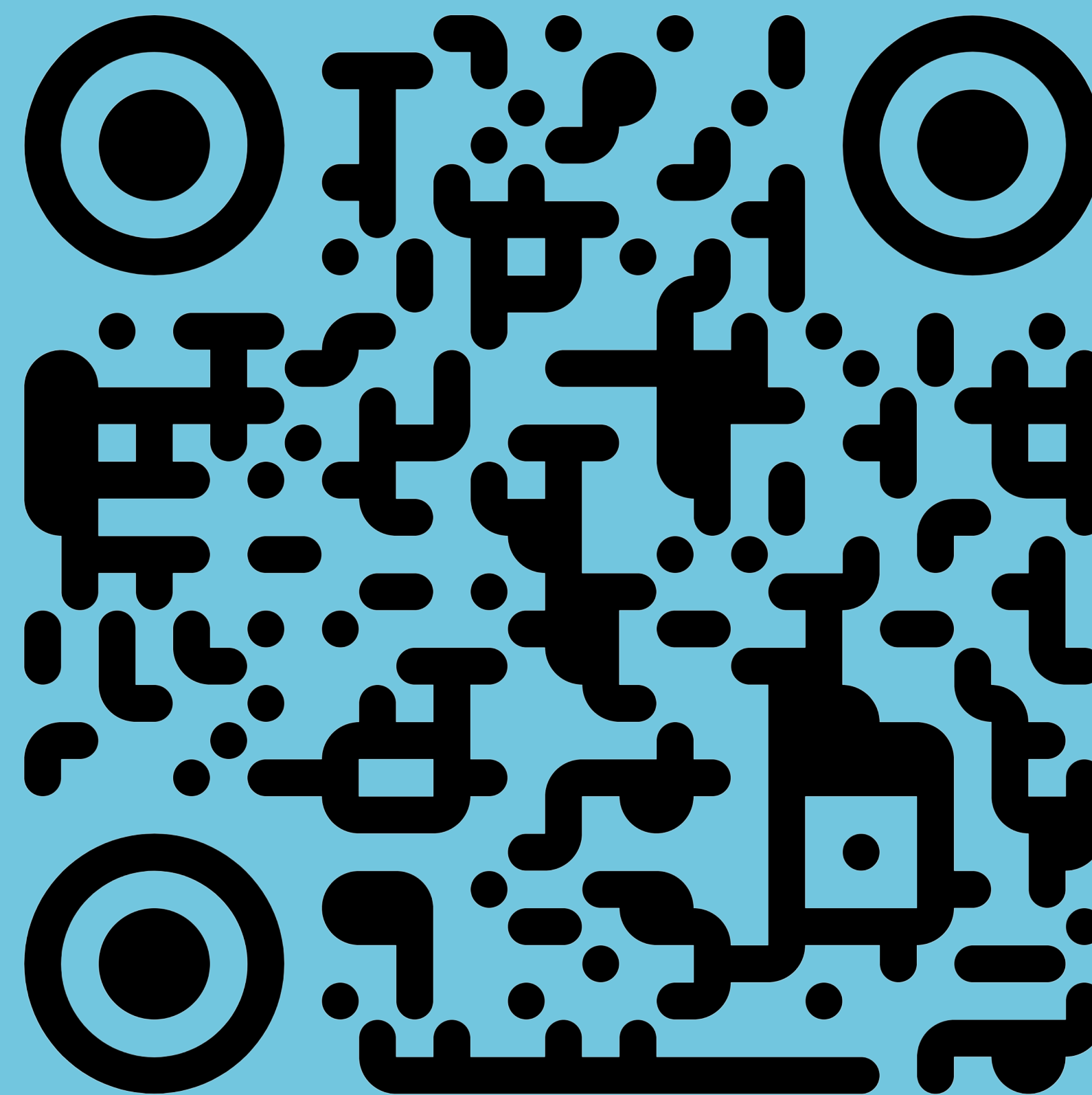
Objective

- Evaluate cover crop termination, weed pressure, and labour use in organic cabbage grown with various combinations of tillage and mulch.

Methods

- Randomized complete block split-plot factorial design with three replicates
- Oat/pea cover crop established before study
- Three cover crop termination treatments (main plots):
 - Mow only (5 d before planting)
 - Mow and cover with silage tarp (18 d before planting)
 - Mow and till (5 d before planting)
- Three mulch treatments (subplots):
 - No mulch
 - Straw mulch
 - Composted mushroom manure mulch
- Twelve 4-week-old cabbages transplanted into each subplot
- Dependent variables: management time; weed cover and biomass; cabbage yield

Covering a mowed cover crop with a tarp instead of tilling reduced time spent weeding in mulched organic cabbage plots.



Find Out More!

Acknowledgments:

Michael Bomford and Andy Smith provided support and guidance in planning and executing this experiment. Highline Mushrooms donated spent mushroom compost.

Results

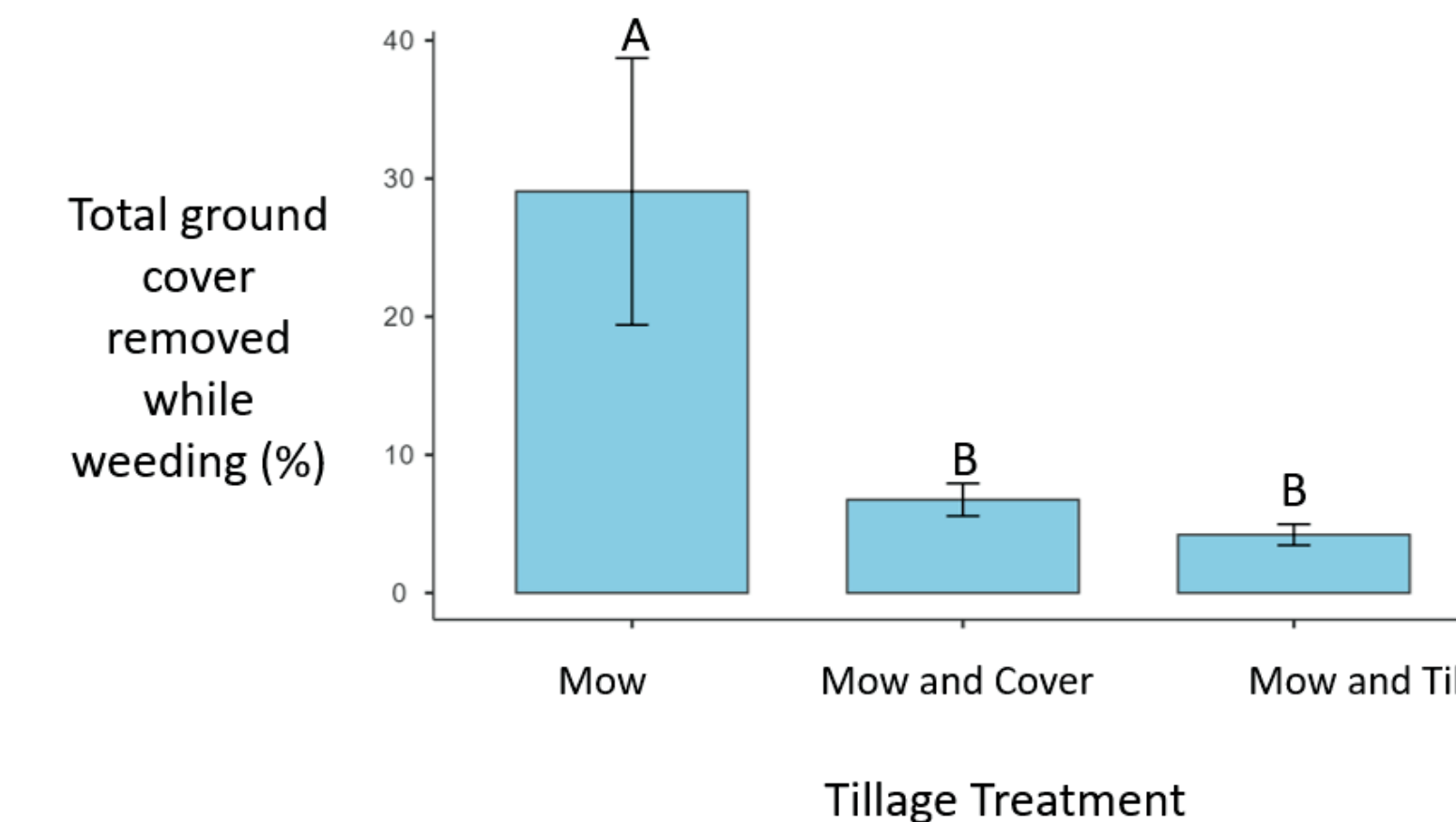


Fig.1 Total weed ground cover removed across different tillage treatments. Bars labelled with the same letters did not differ significantly ($p < 0.05$). Error bars denote standard deviation.

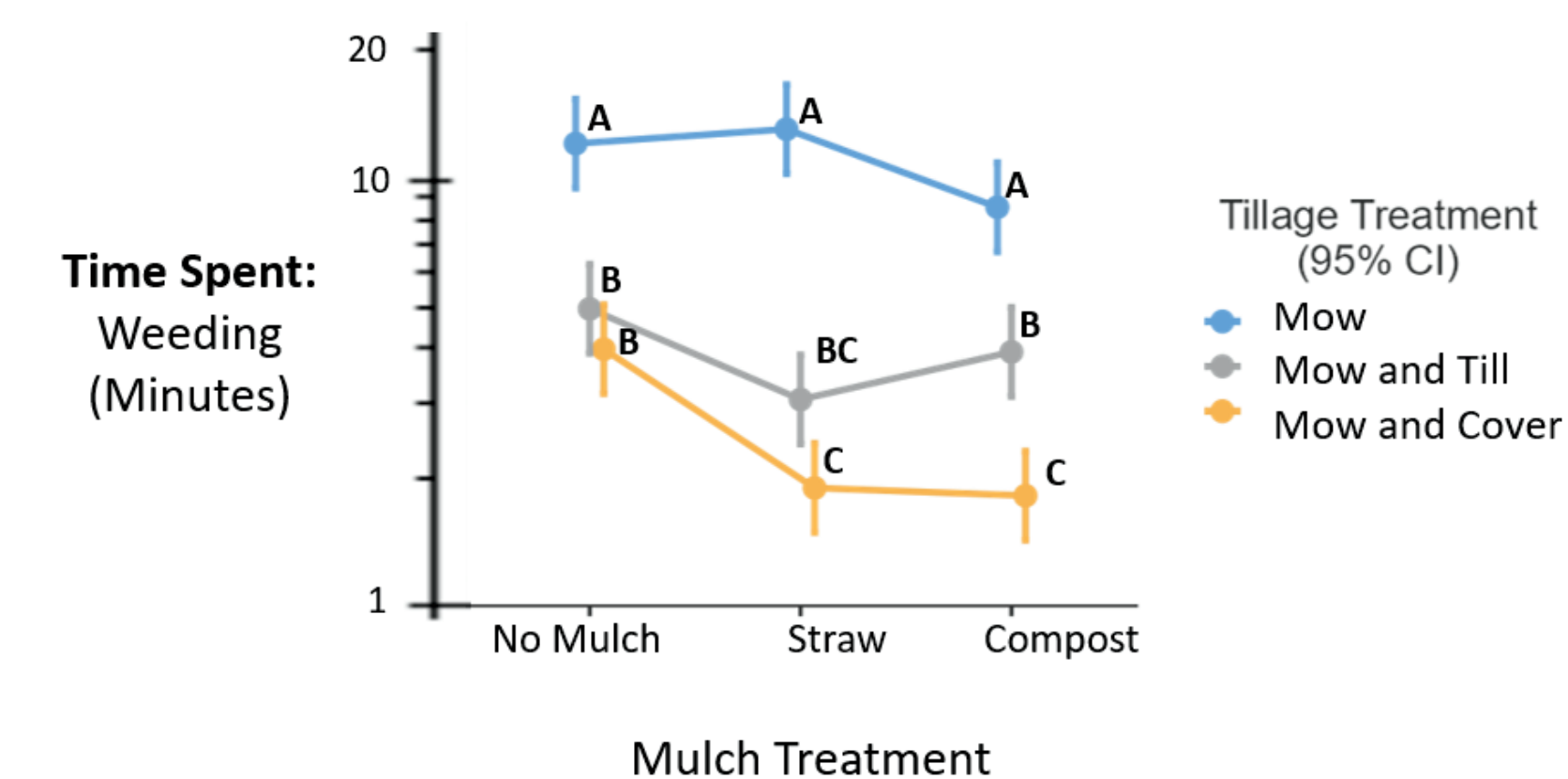


Fig.2 Time spent weeding measured for mulch and tillage treatments. Points labelled with the same letters do not differ significantly ($p < 0.05$). Error bars denote 95% Confidence interval.

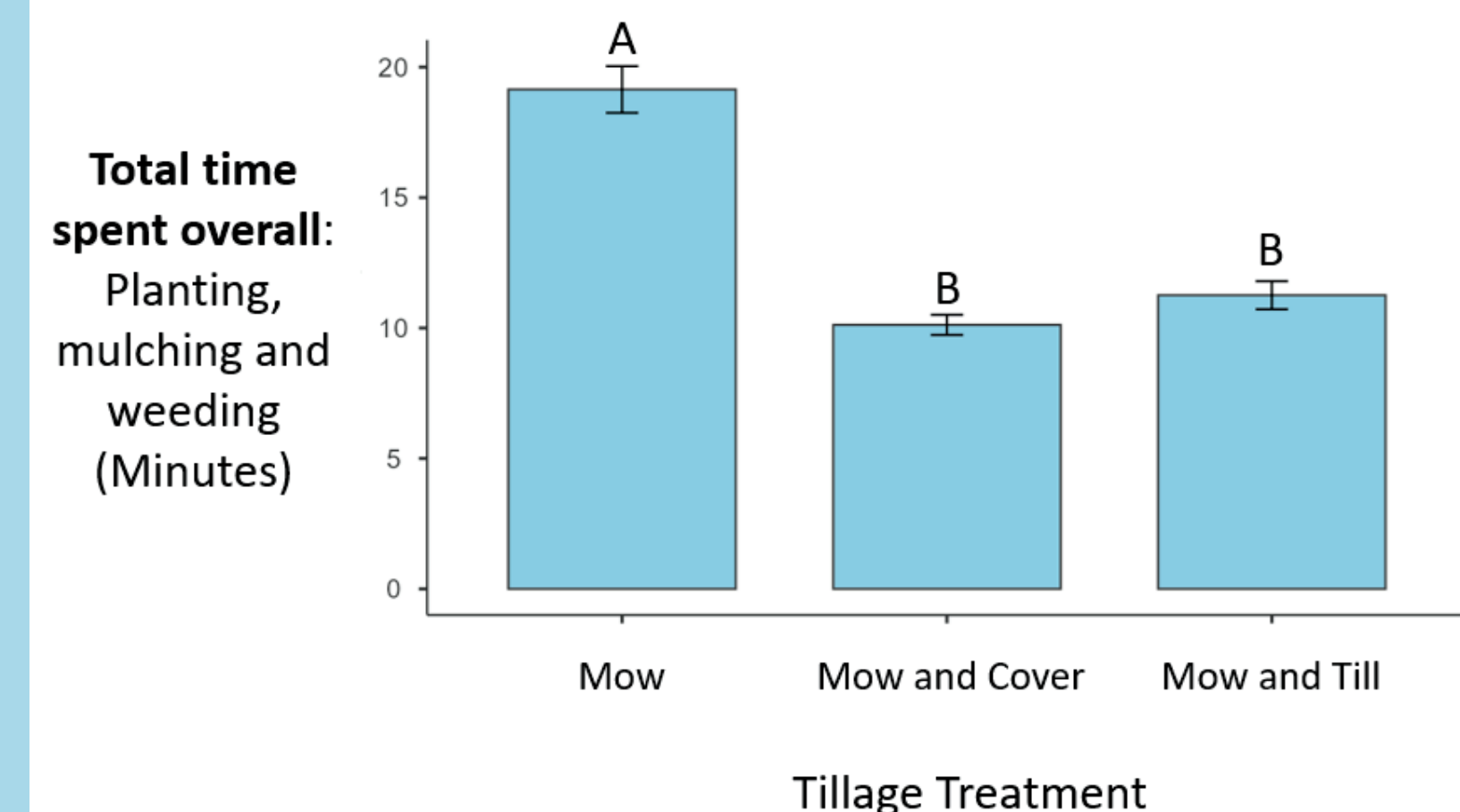


Fig.3 Time spent overall measured for different tillage treatments. Bars labelled with the same letters did not differ significantly ($p < 0.05$). Error bars denote standard deviation.

Conclusion

Mow and cover as a no-till method for managing cover crops is an effective way to reduce tillage. When this method of no-till management is paired with mulch it is able to reduce weed pressure and reduce overall time spent weeding without increasing labour or decreasing crop yield.